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INDUSTRIAL POLICY IN AN OPEN AND COMPETITIVE ENVIRONMENT

Guidelines for a Community approach

Communication of the Commission to the Council and to the European Parliament

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A. Introduction

The concept of industrial policy has been the subject of repeated controversies for many years in the Community. More recently the issue has also been debated in the European Parliament. The debate on the theme of industrial policy is often blurred by the lack of a proper definition and of an appropriate conceptual framework. Similarly the idea of global competitiveness, often put forward as the objective for industrial policy, is vague and ambiguous.

The present time is appropriate for an attempt to build upon experience and to clarify the concept of a modern industrial policy for the Community in the present global competitive environment. Several reasons militate in favour of such a clarification :

- EC economies have undergone major structural transformations over the last years and are reaching a turning-point;
- while the pace of structural adjustment has been high, much more remains to be done;
- future industrial competitiveness in the Community will increasingly be determined by the ability to confront major global challenges, in particular competition from major world partners;
- with completion of the internal market and the much more trans-national way in which industry is operating, the replies to problems of industrial competitiveness must be sought increasingly at the Community level.

Within the Community, a growing consensus - at least implicitly - has developed on the type of policy needed to lay down the conditions for a strong and competitive industry. This emerging consensus has been largely forged by the experience of policies conducted in the Community during the last 4-5 years. The main question is not whether an industrial policy is opportune, as governments are increasingly recognized to have, in advanced economies, an important influence on industrial development and performance. On the contrary, the main issue is which conditions need to be present in order to strengthen the optimal allocation of resources by market forces, towards accelerating structural adjustment and towards improving industrial competitiveness and the industrial and particularly technological long term framework. The rôle of public authorities is above all as a catalyst and pathbreaker for innovation. The main responsibility for industrial competitiveness must lie with firms themselves, but they should be able to expect from public authorities clear and predictable conditions for their activities.

I. Identify the Community interest

To develop an industrial policy concept, one must refer to the Community interest. This implies a reflection:

- on the relative situation of Community industry;
- on the basic factors of competitiveness on global markets;
- on the way in which the different parties concerned can contribute to improving this competitiveness through taking their responsibility in a coherent and articulate fashion.

The Commission considers that only a competitive industry will allow the Community to maintain its position in the world economy, which constitutes the essence of the Community interest.

This reflection should be based on:

- the definition of common interests and areas of potential conflict with its main competitors;
- the development of analysis of and prospects for the relative industrial and technological situation of the Community;
- the development of discussion on industrial problems built around the medium term;
- active partnership between all the interested parties (firms, social partners, scientific bodies, local, regional, national and Community authorities);
- the development of joint operations based on new types of industrial cooperation in areas of common interest with our partners.

II. The experience of industrial adjustment

EC economies have undergone major transformations in the last 4-5 years. These transformations took the form of large-scale macro-economic stabilization leading to a return to non-inflationary growth, of far-reaching structural adjustment and of the strongest industrial recovery since the early seventies. Such global changes, which were long and painful to achieve, were based upon three main factors for which the Community has offered a most valuable framework and which in return revealed a high degree of Community consensus : macro-economic stabilization, completion of the Internal Market, and substantial measures aimed at strengthening the economic and technological base.

These policies provoked a remarkable reversal from an economic situation which was almost unanimously considered, at the beginning of the last decade, as condemned to stagflation, high unemployment and industrial decay. The strength of the successful combination of macro-economic and structural policies can in part be attributed to the following characteristics which continue to be of high relevance for the future :

- first, policy was based on the recognition that EC economies, in particular in the industrial sector, are confronted with a permanent need for structural adjustment. The correct reaction to these challenges does not lie in quick-fix solutions but in measures designed to strengthen the industrial and technological base. Such a policy must be applied over a sufficient period of time to strengthen industry's confidence;
- second, policies conducted both at macro- and at micro-levels must be mutually reinforcing and they must be based on a broad consensus among Member States. Remarkable progress has been made over recent years in achieving coherence between national economic policies, which must be extended. The EMS as a precursor to Economic and Monetary Union is making an important contribution;
- third, policies followed also require a high degree of consistency and transparency. Hence the strong positive effect on manufacturing investment, which typically requires longer-term horizons.

Industrial policies must learn from past experience. During the seventies, the two oil-shocks were largely carried by the corporate sector, which had damaging consequences on the financial position of firms and on their capacity to invest and so to remain competitive. During the eighties, on the contrary, business profitability increased substantially. Firms were progressively able to restore more balanced financial situations and thereby to commit themselves to large investment programmes both for capacity extension and to improve productivity. One should not overlook the fact that adjustment in the Community still has a long way to go before the problem of high unemployment in several Member States can be solved, and world market positions improved.

III. Global challenges ahead

While the recent performance of EC industry is favourable overall, economic perspectives, both short and medium-term, already reveal today new global industrial challenges as well as several macro-economic uncertainties. As a result, if the slogans of Euroclerosis and Europessimism of the early eighties appear now to have been grossly overdone, there should still be no room for self-complacency. With a high living-standard to preserve and to improve, EC industry is condemned to technological, commercial and financial excellence in order to enable the necessary social and environmental expenses to be incurred. But the economic environment is bound to become more difficult:

- **competition is becoming ever more global and more intense both on the world and on the Community markets.** Industrial success encountered by the Community's main competitors in several areas where they now fix the reference to competitiveness at the world level justifies that the Community reflects on its long term industrial interests. If Community firms continue to hold leading positions for many advanced technologies in aerospace, chemicals and pharmaceuticals, the difficulties met on certain markets for electronics (data processing, semi-conductors, components) for which the international competitive situation is especially preoccupying must be acknowledged, in particular as a result of the level of concentration of world production and the existence of entry barriers.
- **technological know-how continues to require ever higher investment and permanently shortens product cycles.** True a certain number of key emerging technologies (advanced materials, advanced electronics and information systems, integrated manufacturing systems, life-science applications) are also in the hands of the Community, but their industrial application becomes more and more difficult. Only those able to occupy a position in the forefront of technological progress can maintain and improve competitiveness. This applies to both the nature of products-offered and the production techniques used;
- **the role of global corporate strategies is now determinant.** As a consequence policies for production localization are now decided on the basis of a systematic comparison of production conditions. The EC has the advantage of hosting a number of large global corporations. But it is essential that it remains competitive as a production site for these corporations. The presence of industrial clusters is of critical importance for this. It is also crucial that firms from the Community are present on the markets of its major competitors;
- **macro-economic conditions are bound to be more difficult for manufacturing investment with the emergence of strong competing claims on available savings.** Three main developments are crucial in this respect : the increasing

role of environmental preoccupations, the need to reconstruct sound and competitive economies in Central and Eastern Europe and the challenge of coping with the consequences of the ageing of our societies. The first two imply large investment requirements while the latter will demand additional financial resources for social needs for the elderly. The higher rate of capital formation required will make the profitability of private investments more important to attract new savings.

- finally current developments recall that the fragility of Western manufacturing economies should never be forgotten. The macro-economic context has improved greatly in the EC over the recent period. Nevertheless the sensitivity to external shocks, in the field of exchange rates and of oil prices, remains high. In addition, the Community should be particularly attentive to the situation of developing countries, which are still more sensitive to external shocks by virtue of the fragility of their economies as result of their level of debt, the fall in the price of certain raw materials, and difficulties encountered when exporting traditional products. Helping developing countries to escape from the crisis is also in the Community's own interest. This makes it even more important to strengthen international cooperation in order to avoid world-wide turbulence.

This combination of factors presents four main challenges for EC industry :

- the standard of living and level of employment in the EC will continue to depend on the capacity to stay abreast of international industrial competition. In turn this requires staying ahead of technological competition, producing large productivity gains, sufficiently investing in human capital and especially accepting a high pace of structural change. There is no alternative to such an industrial strategy for the EC to preserve and improve on a high standard of living;
- firms' capacity to invest more and more efficiently in both equipment and technological know-how and in training and qualifications will continue to be a prerequisite. It requires that firms are able to generate adequate volumes of financial resources, which in turn means that preserving the levels of profitability must be a top priority. The consequences in the area of wage and taxation developments should be fully perceived;
- the capacity to master efficiently the diffusion of technological innovation will offer a crucial competitive advantage. In this respect the capacity of EC industry to make best use of the potential and the results from technological research and development undertaken in Europe will be, more than ever, of great importance for its industrial competitiveness. But of even greater importance will be the capacity of industry to realise innovation - including incremental innovation - in all areas of business, and to achieve a better balance between supply and demand for goods and services;
- the capacity to develop human resources to master technological change and new working organisation. This requires, in particular, a greater ability to forecast the skill needs for the future for EC industry.

The Commission is well prepared to face those challenges. The completion of the Internal Market is a key factor for increasing competitiveness. Moreover, additional opportunities are provided by perspectives for the European economy and developments in Central and Eastern Europe.

IV. The concept of Community industrial policy

The present Communication aims at **developing an industrial policy concept for the Community as a whole**. It lays the emphasis on the need to concentrate on the **creation of the right business environment and on the priority to give to a positive, open and subsidiarity- oriented approach**. The case for such a concept for the Community is dictated both by the experience of the recent past and by the main features of the European economy. Sectoral approaches to industry policy can work during a period but they entail inevitably the risk of delaying structural adjustments and thereby creating job losses in the future. Openness to international trade and respect of the rules governing such trade deliver the right signals to the economy and preclude the recourse by the Community to the various types of defensive measures commonly used to protect domestic producers in the furtherance of such policies. By experience, a competitive environment applied to all on the same basis is the best guarantee for a strong and competitive industry.

The industrial policy concept for the Community should therefore be built around an adequate balance between the following key elements:

- first, lay down stable and long term conditions for an efficiently functioning market economy : maintenance of a competitive economic environment, as well as a high level of educational attainment and of social cohesion;
- second, provide the main catalysts for structural adjustment. In this respect, the completion of the Internal Market has a strategic role to play. The principles on which the Internal Market programme are based built around the harmonization of essential items and the mutual recognition of Member States own systems also provide optimal opportunities for industrial development;
- third, develop the instruments to accelerate structural adjustment and to enhance competitiveness, .

B. The Community approach

The Internal Market itself represents an essential step for business to look, think and act strategically beyond national borders. A number of other measures are necessary to facilitate the process of internationalisation by strengthening the ability of European industry to compete both on its own market and globally. The Internal Market is also open to firms from third countries. Therefore it is all the more important to prepare European industry for stronger competition.

The process by which industry adapts on a permanent basis to the signals provided by the market can best be described under the heading of structural adjustment. It comprises the steady shifting of resources in reply to these signals towards the most productive outlets, and thereby enables an ever higher standard of living to be attained. Structural adjustment and international competitiveness are closely linked since the ability to produce effectively for markets comes precisely from that speedy adjustment of resources to demand which is at the basis of structural adjustment. European industry must find its own path, but it must also be willing to learn from others. Therefore, European industrial policy must provide a reasonable framework for industry to compete successfully world-wide. Effective competition, financial and societal incentives for new business formation are the most important conditions for creating the necessary breeding ground for a market economy.

Behind the Community's approach, therefore, to industrial policy lies the will to promote the most efficient functioning of markets. **A dynamic industrial policy**

concerns the effective and coherent implementation of all those policies which impinge on the structural adjustment of industry. Three axes can be used to build an effective industrial approach;

- maintaining a favourable business environment

An efficient market economy requires that the main initiative and responsibility for structural adjustment must lie with economic operators. This means that public authorities may take accompanying measures to assist and speed up the process, particularly in the area of infrastructural provision (for example education, energy and telecommunications networks, research and development capacity), but can never substitute for the decisions to be made by business. The link between risk and rewards cannot be separated and must be borne by firms. The necessary environment for industrial development is however not always easy to achieve. Special interests are always attempting to obtain favourable treatment at the expense of the free play of market forces. European industrial policy must convince firms that such competition hindering activities prove ultimately counter-productive.

Creation of a favourable business environment also involves ensuring that superfluous and niggling bureaucratic regulation is eliminated. Community policies must also fulfil this requirement. The Internal Market must be made as unbureaucratic as possible. This includes especially a horizontal approach to harmonization; sector specific rules should only be made in exceptional cases. Both the Community and the Member States have therefore undertaken actions during the last decade specifically aimed at ensuring that in the development of regulation and procedures account is taken of the need not to impose undue burdens on industry, particularly on smaller businesses. The freer enterprise climate thus created has led to the creation and development of many small businesses which in turn has contributed significantly to the growth in employment.

Such measures must continue to be applied if a healthy business environment is to be maintained. Arrangements for ensuring that representatives of industry, including those of SMEs, are consulted at the earliest possible stage in the preparation of proposals which will affect them in the conduct of their business, are of particular importance. This does not mean that legitimate policy objectives, such as those in the social, environmental and consumer protection areas must be sacrificed to the interests of industry. Their impact on industry must however be considered so that a reasonable and balanced approach can be adopted

- implementing a positive approach to adjustment

A positive approach to industrial adjustment implies the recourse to policy which enables public authorities to avoid "defensive" industrial policies of a protectionist nature; policies which have resulted in the past from the failure to anticipate in time necessary adjustments or as a manner of easing the adaptation required. This has only partially been successful, for example in steel policy. Most "sectoral" policies in practice have been directed more towards social objectives than the achievement of adjustment. On the contrary, the Community's industrial approach should be based on the active promotion of positive adjustment. Sectoral policies must promote structural adjustment and not retard it. Sector specific policies have to be carefully examined and possibly adapted.

- maintaining an open approach to markets

The optimal allocation of resources requires that markets should be open, both outside as well as inside the Community. Without open markets the benefits of competition and specialisation can not be reaped. Therefore, market opening should be generalised and all partners must participate equally in the process on the basis of mutual comprehension and effective implementation of rules which guarantee the proper functioning of trade.

The Community will also remain open for direct investment from third countries. Direct investment is an invigorating competitive element by which technical know-how and industrial competence are exchanged and international economic integration put on a broader basis.

Three main areas cover the principal stages of structural adjustment :

- prerequisites required for structural adjustment to get under way;*
- catalysts, which act on the willingness of business to undertake adjustment in reply to pressures and opportunities;*
- accelerators, which further develop structural adjustment.*

I. Ensuring the necessary prerequisites for adjustment

In order for industry to actively participate in the process of structural adjustment a number of prerequisites need to be met.

1. Securing a competitive environment: an essential task

In order to achieve competitive conditions it is essential for:

- first, the greatest vigilance to be exercised on very large concentrations. Such vigilance should ensure the best combination between the requirements imposed by international competition and the maintenance of balanced and competitive conditions of operation between operators on the domestic market.**

Globalisation of markets enables not only greater economies of scale to be reaped and but also specialisation for more defined market segments. At the same time, greater standardisation of products places a premium on product innovation, manufacturing excellence, design, reliability compared with the more traditional factors like proximity to markets, distribution systems and customer loyalty. The bases for competition are considerably modified, in particular through rising barriers to entry from higher minimum efficient scales of operations and more and more intensive research and development expenditure. Competition policy must also take this into account. It is essential for the appreciation of the problem of concentrations that this appreciation should not be limited to the Community market when concentrations are subject to international competition.

Faced by such tendencies towards globalisation, European firms must be able to meet the terms of competition as appropriate. In turn, this implies that great care be taken over the definition of the relevant market on which competition must be maintained. Countries with internationally successful industrial sectors have usually been found to possess several competitive firms in the same industry - even when their domestic markets are quite small. Indeed, domestic rivalry between firms can be said to constitute an important

element in success overseas. Completion of the internal market should provide the necessary basis both to allow the development of enterprises of sufficient scale and to ensure that competition on that market can be effective. Since the conditions of competition vary considerably between sectors and over time, it will be necessary to analyse such conditions on a permanent basis.

The regulation on the control of concentrations puts in place the necessary legal instrument for Community treatment of large mergers and acquisitions. The regulation provides a high degree of the necessary legal security and rapidity for firms in their pursuit of suitable business strategies for competing on the internal market, which must necessarily include the possibility of growth through mergers and acquisitions as long as competition remains effective in the markets concerned. The Regulation will ensure rapid approval of mergers which are not anti-competitive.

- secondly, financial support by public authorities must be rigorously examined and controlled. As other forms of protectionism recede, the importance of state aids as an anti-competitive mechanism tends to grow. Beyond their negative effect on competition, state aids can also have serious implications for economic convergence within the Community. Large and well developed Member States will always be able to outbid less developed Member States on the periphery of the Community. The four largest Member States account for 88% of all aid granted. The objective of industrial policy should be to create the conditions which allow better control of such subsidies.

It is important to ensure that state expenditure, far from representing a positive contribution to the competitiveness of a region, does not become a covert anti-competitive mechanism which inhibits structural adjustment. Moreover, the effectiveness of the Community's policies to promote greater cohesion could be improved by some progressive reduction in aid intensities in the central and more prosperous regions.

The link between the control of state aids and economic convergence covers several aspects. Existing aid ceilings for the purposes of regional development need to be rigorously enforced. It is not so much the quantity of aid granted as the importance of the differential between existing aid schemes which acts as the spur for foot-loose industrial location. Less developed Member States can therefore make significant budgetary savings provided that the appropriate differentials on a low level are maintained. In addition to national state aids, the granting of aid in cash or kind by sub-national (regional or local) authorities needs to be monitored, since it adds to the total volume of aid and probably aggravates counter-cohesive distortions since authorities in more prosperous parts of the Community are able to offer more generous incentives.

The value of regional development grants can also be undermined by continuing state aids of a sectoral character, which by falsifying competition within an industry also alter optimal location decisions. Sector-specific aids must be limited in both duration and value, and made degressive. Their main task lies in easing structural adjustments. Finally, a return to sectoral subsidisation must not be allowed to occur through the use made of existing regional development schemes in more developed parts of the Community, in particular for capital-intensive investments.

Putting a stop to the international subsidy race is an important prerequisite for a further reduction in state aids in the Community. Stricter disciplines on state aids should be applied by the Community's international partners.

2. Maintaining a stable economic environment

The return to a stable economic environment ensuring improved functioning of the price mechanism allowed industrial recovery in the Community to occur. The maintenance of such conditions, in particular with regard to savings and investment, will continue to be required.

Fiscal policies also have a strong effect on the capacity of firms to invest, and thereby to adjust to market conditions. On the one hand, public authorities must be able to raise the necessary finance for their activities, which includes the direct taxation of enterprises. On the other hand, fiscal treatment, in particular of profits and depreciation, has an impact on the cost and availability to firms of funds for investment. Of particular importance in this context are the fiscal treatment of depreciation and retained earnings. In a time of greatly increased international competition, the impact on European competitiveness of such measures can no longer be neglected. The capital stock is ever more quickly depreciated by technological innovation. There follows a higher requirement for own capital formation, which should be promoted by fiscal policy, which is already the case in certain Member States.

3. Ensuring a high level of educational attainment

A high level of educational attainment represents the foundation for the necessary level of human capital which advanced economies require. Increasingly the ability to generate and assimilate new technologies, organisational methods and cultural diversity, rather than the level of knowledge itself, is becoming a pre-requisite for effective structural adjustment. Lifelong learning should therefore become an attitude and practice to continuously upgrade skills. Some serious imbalances have also arisen with regard to the supply and demand of trained people. All round education is an important advantage for European industry which can be further strengthened by greater development of specialised knowledge after school. Permanent market oriented research and training is necessary to maintain or achieve competitive advantage on specialised markets.

4. Promoting economic and social cohesion

The diversity of Europe's regions presents challenges as well as advantages. The effectiveness of the large market can be enhanced by greater levels of economic cohesion among its regions. The adjustment of less favoured regions to the 1992 Single Market is being assisted by the Community's Structural Funds, which were enhanced for this purpose. They are operating on the factors which are crucial to the competitiveness of businesses, such as the provision of advanced infrastructures and the quality of human resources. Economic convergence between Member States and greater cohesion between regions occurs more spontaneously among countries and regions which have reached a more mature level of economic development. It is important to ensure that industries in those regions which are significantly less highly developed than the central regions of the Community have access to the sort of infrastructures which will enable them to compete on more equal terms not just with other regions within Europe but also on the global market. Dialogue and partnership between industry and the public authorities have a vital rôle to play in this process.

Flexible, innovative, knowledge intensive industry requires strong social cohesion. Employee information, consultation and participation in decision making facilitates structural adjustment by securing confidence in business decisions and assisting the rapid introduction of new working methods and the redeployment of human resources within the enterprise. Appropriate information and consultation practices covering employees at all levels of responsibility within the enterprise will reinforce their motivation and their receptivity to changes. A good balance between the needs

of the various parties concerned will play an important constructive rôle in such processes.

Adjustments can also be carried out easier in those circumstances, where an adequate level of social protection provides a safety net which diminishes the risks of change and so promotes mobility. At the same time the economy and individual enterprises require a good degree of flexibility, which should not be hampered unnecessarily by too restrictive regulatory practices.

Flexible working hours, which can take various forms, also of an innovative nature, will be a matter for negotiations and/or agreements, according to the level concerned. This should not only encourage the creation of new jobs, but also facilitate a better utilisation of production equipment in accordance with changing market conditions and at the same time contribute to an improvement of working conditions, in particular with a view to the health of the worker and to his possibilities of better organizing his time both within and outside work. Although such cohesion can not be without costs for enterprises, these costs must be viewed in the light of the benefits that they are able to draw from it and as a necessary condition for the normal conduct of their activities. It is crucial for higher social costs to be obtained through higher productivity.

5. Achieving a high level of environmental protection

Continued economic growth can only be sustained by a high level of protection for the environment. As it is no longer possible to treat environmental resources without due regard to their intrinsic value, it is necessary to ensure that the utilization of natural resources is both prudent and rational. It is also necessary for the utilisation cost of these resources to be internalised in the market price of products

To begin with, the heightened concern for environmental matters led to an increased flow of information, and a complex of legislation in order to protect health and the natural environment. Increasingly, environmental awareness is underlined by growing consumer demand for products and services perceived to be environmentally friendly. Environment has a value in itself. Therefore it must be used sparingly.

In the case of acute dangers to health of the environment, outright prohibition is unavoidable. In the interests of conservation, the environment is being seen as a valuable resource for whose use public authorities must impose a framework to guard against overuse. This market oriented approach concords with the principle that the polluter pays.

Since it is now certain that the necessity to pay due regard to the environment is imperative throughout the world for all segments of business, a leading position occupied by Community firms in the field of environmental protection can represent a major competitive advantage. Such an advantage, achieved by a high level of environmental standards must not be allowed to erode. As international competitors to European industry also meet increasingly higher environmental standards, it is imperative that European standards can surpass or at least equal them so that European firms are not hindered in trading freely. Within the single market, it will also be necessary to meet such high levels not only to meet legislative requirements but also to facilitate consumer acceptance and to avoid fragmentation as a result of varying national measures. Having been set at a high level, environmental standards need to be predictable and stable so that industry can produce with sufficient scale to amortize the investments required.

Building on their advantage, many enterprises are anticipating actively developments in the field of environmental standards by adopting appropriate environmental strategies. Through the development of internal environmental audits, many firms can

integrate conception, design, production and marketing of products with appropriate clean production processes and technologies. This allows substantial savings of energy previously wasted in the production process, for heating and in the transport of goods, and in materials and labour usage. This approach has led to investments which do not merely add "filters" to existing plant to capture the waste products but concentrate on the prevention of waste generation.

The high percentage of total investment devoted to environmental protection in certain sectors provides industries supplying the necessary products and know-how with a major market. The current market is estimated by OECD at between 65 and 90 billion ECU, of which 40 billion ECU in the EC. The fact that several European countries still have some way to go before they attain similar levels of equipment for certain types of protection to that of the US and Japan today means that the rate of growth of the European environmental protection industry should be particularly rapid. In addition, new market opportunities for business will arise in ensuring environmental standards and legislation have been complied with. Such opportunities can also help to diffuse knowledge about possible cost savings from adopting clean technologies.

A high level of environmental protection is increasingly being met by economic and fiscal instruments and voluntary agencies rather than through legislation. In order to prevent distortions of competition, there must in addition be policies towards developing harmonised standards and regulations, particularly in the fields of energy, waste management and disposal, recycling, incinerators, vehicle emissions, CFCs and agro-chemicals (fertilizers). Instead of considering that the requirements of environmental protection represent a constraint on growth, they should be considered increasingly as an opportunity in favour of competitiveness. Well conceived environmental policies should therefore result in increased efficiency and lasting improvements in the competitive position of industry.

II. Providing the catalysts for adjustment

Certain policies play a particularly important rôle in industrial policy by acting as catalysts for change. Those policies which favour firms' initiative and guide them in the direction of a long term perspective founded on the Community's interests are to be preferred. Establishing a stimulating economic environment thus requires a clear political consensus on the economic policy to be followed and the necessary resulting decisions. Such an industrial policy is anything but a policy of "laissez-faire".

1. The Internal Market as a factor for change

Through providing a home market of the requisite size and quality, the programme to complete the Internal Market can be considered as industrial policy par excellence. It is not at all the case that at a time that competition increasingly takes the form of global competition on the major markets of the world, the importance of the home market diminishes. All competitors require a home base, from which they may subsequently add foreign operations.

The advantages for achieving economies of scale for investments on the domestic market are not only relevant for mass production, but also for the development of specialised products. As important as the size of the home market is its quality. This is based around the composition of domestic demand, for example for specialised products, and the specific elements of the cultural environment which provide special advantages for competing in particular industries. Italian success in design is an example. The way in which the internal market programme is implemented largely through the principle of mutual recognition allows many of these regional features to be exploited effectively by opening up new market opportunities without sacrificing essentially local specific advantages. In this sense the interlocking and competitive

nature of the European home market is the very opposite of a homogeneous and undifferentiated mass market for standardised products. Such markets no longer offer great advantages in the face of increasingly sophisticated, quality conscious and individualistic consumers. Different tastes and cultural characteristics also in future guarantee a diversified market. The elimination of internal frontiers can lead to new competitive situations, which bring forth even better and more sophisticated goods.

Although the Internal Market programme represents a whole which must be implemented fully for the benefits for business to flow, some areas of the programme have special benefits to those that the single market will bring in terms of the economies of scale and opportunities for greater specialisation.

a) Standards and product quality

Over the past five years, European standardization has been transformed from a marginal activity to one which is attracting priority attention. The importance that voluntary standards have assumed in the Community's technical legislation has been the driving force behind this change. The development of a European standards system is, however, an on-going process which will take several years to complete.

Under the new approach to technical harmonisation and standardization, legislation is confined to laying down the essential requirements to which products must comply in order to ensure the protection of public health or safety, or the protection of the environment or the consumer. European standards provide manufacturers with a set of technical specifications recognized in each Directive as giving a presumption of conformity to the essential requirements. The European standards concerned remain voluntary.

Since the adoption of the new approach, the number of new European standards has increased rapidly from 19 in 1985 to 150 in 1989. This is still low compared to that of unharmonized national standards, and compared to the requirements for the implementation of the Internal Market programme.

European standards are not only required for the purpose of removing technical barriers to trade, but increasingly they are also becoming a key item for the promotion of industrial competitiveness.

Standards promote competitiveness by:

- lowering costs for producers;
- shaping customer preferences for products by their familiarity;
- enabling the emergence of new markets, particularly for developing technologies, where they are becoming a pre-condition for industrial production or marketing.

In those areas for which markets are becoming global, it is crucial that European standards be set at the requisite level and be compatible with international standards. There will still need to be European standards, however, because international standards are not binding but have the status of recommendations. In the absence of internationally agreed standards, it will also be necessary to set standards at the European level initially thereby paving the way to the creation of international standards. Standards for new technologies must be delivered more quickly than ever before if they are to meet the needs of the market.

If standards are to play an important rôle in improving industrial competitiveness they must command credibility in the market and become the norm by which

competitors are judged. It is important, therefore, that they be set at a high level. In this way, the value of standards gains acceptance from end users and the necessity for producers to upgrade quality to meet those standards acts as a spur. The voluntary approach adopted for implementation - apart from legal requirements for type approval - means that it should be possible to agree standards of a high technical level. It also means that private initiative by business must play an essential rôle in the standards setting process and in the financing of the attendant costs.

Successful standardization implies successful implementation. Credible procedures for certification, inspection and testing play a key rôle in creating the conditions which allow confidence to grow and mutual recognition of each Member States' procedures to become effective.

Efficient procedures for applying standards entail an added gain for competitiveness when they go beyond certification to cover also conformity assessment - including testing, quality systems and accreditation in addition to certification. It is when control takes place before production, (in the course of the development of a prototype or model), or during production (either as surveillance of products or of production processes), that industry gains most advantage. Increasingly, industry is using quality systems as a source of competitive advantage and to diminish costs associated with lack of quality. Third party certification adds credibility to these efforts both internally within the firm and externally for clients.

b) Public procurement

The great importance of public procurement for industrial competitiveness is threefold :

- Firstly, the vast size of public procurement - 600 billion ECU or 16% of GDP in 1987 - means that market access is very important for all firms. Of this vast market, available information for the larger Member States shows that less than 4% is taken by imports - and in some cases less than 1%. Compared with markets in general, for which import penetration is around 20% for these countries, public procurement is still very closed.

- Secondly, public procurement may enhance technological capability when it is directed towards the upgrading of marketable demand for products of the latest technology. In order to increase this effect, invitations to tender should preferably be formulated in an open manner and not fix the "state of technology".

- Thirdly, public procurement is heavily concentrated on a relatively small group of sectors, and these industries depend on a competitive market for public procurement to develop the necessary products and skills to be successful internationally. Fewer than 20 subsectors of the 60 surveyed for procurement practices account for more than 85% of public procurement. As a result public procurement represents a substantial proportion of total sales for power generation equipment and computers & office machinery (30%), aerospace equipment (50%), and railway rolling stock and telecommunications equipment (90%).

The existence of considerable economies of scale in the manufacture of these products has led to high entry barriers and the creation of oligopolistic structures. The lack of innovative competition has led to a redirection of effort toward meeting existing technical requirements at the expense of product innovation, marketing and achieving value for money.

Governments have often rationalised the need to accept such situations through arguments in favour of "national champions" in order to guarantee security of supply, to maintain a presence in certain vulnerable areas of high technology or to protect jobs. The failure of such strategies is well illustrated by the data processing sector where Europe has consistently failed to produce internationally competitive suppliers in spite of massive public support. Without the requirement to adjust in response to the existence of a number of competitors, the necessary spur to innovation is normally lacking. So-called high technology industries quickly lose any competitive advantages provided by protection. It is precisely for these industries, therefore, that the opening up of public procurement is of greatest importance. It will only be possible to effectively open such markets, however, if the necessary standards at European level are in place.

The strengthening of competition will boost intra-Community trade as well as inducing significant price reductions. Price reductions will occur as public authorities increasingly buy from suppliers who offer the best terms combined with suppliers themselves reducing their prices to meet the greater competitive challenge. In the longer term, lower prices will have to be reflected in production costs. This will lead to major restructuring operations (mergers and plant closures). These structural changes will result in large efficiency gains and the emergence of production units of optimum size with respect to the more integrated Community market. However, the benefits from opening up public procurement will only be reaped if the necessary rules are fully and effectively enforced. In the context of the international opening up of public procurement, it is desirable that the Community's competitors respect disciplines as strict as the Community applies on its own market.

c) The abolition of national quotas

Even today, more than thirty years after the Treaty of Rome, Member States continue to apply over two thousand national quotas on imports from third countries, in particular in execution of Article 115 of the Treaty, and a variety of bilateral "voluntary export restrictions" to protect their industry from third country imports in a number of sectors, including for example automobiles, textiles, toys, porcelain and chemicals. Such arrangements are not consistent with the objectives of the internal market with its freedom for all goods and services to flow throughout the Community. The Internal Market must also be open to goods and services from third countries once they have been legitimately imported into the Community. After completion of the Internal Market, it will no longer be possible to use boarder controls at internal frontiers to apply such restrictions.

The removal of third country quotas and similar measures represents an important item of industrial policy because it exposes national markets to a greater degree of international competition and by so doing prepares them for global challenges. The necessary structural adjustment which results from the removal of quantitative restrictions should be taken into account by the Community's structural policies, if necessary by horizontal measures. Defensive protective strategies and subsidies to maintain unprofitable capacity are not an appropriate response to strengthen permanently the industrial competitiveness of European industry.

d) A coherent legal framework for business

The internal market programme also affects the legal framework for doing business in the Community. The appropriate legal instruments need to be available for firms to choose the most appropriate legal form and size for their needs.

As far as mergers are a necessary pre-requisite for optimal company size, the internal market should provide the necessary legal conditions, subject always to the essential requirement of maintaining competition. At present, company mergers across

frontiers are made more difficult than necessary from a legal point of view. In fiscal policy, the two directives on mergers, divisions, transfers of assets and exchanges of shares concerning companies of different Member States and on the Community system of taxation applicable in the case of parent companies and subsidiaries of different Member States, which were adopted by the Council on 23 July 1990 and which are due to enter into force on 1 January 1992 will remove the main tax obstacles to co-operation and restructuring of enterprises within the Community. Additional proposals will be put forward before the end of 1990 according to the orientations set out in the Commission Communication to the Parliament and to the Council concerning guide-lines on reforming taxation of 20 April 1990. From an industrial policy point of view, the possibility for trans-national parent companies and subsidiaries to carry forward and backward losses is of outstanding interest. As far as company law is concerned, it is expected that the adoption of the 10th Directive on transnational mergers will remove the remaining obstacles inherent in the existing national legislations. The setting up of a joint subsidiary involves at least one partner in an unfamiliar legal system while, again, the tax implications may act as a disincentive. When businesses wish to pursue jointly a single activity, they had no appropriate corporate European form.

The entry into force of the European Economic Interest Grouping has gone some way to remedying the problem. The adoption of the European Company statute, which has been before the Council for several months, will go a step further by allowing companies incorporated in different Member States to merge or to form a holding company or joint subsidiary of a European format, while avoiding the legal and practical constraints arising from the existence of twelve different legal systems. Since the decision to adopt such a statute will be a matter of choice for the firms themselves, and the possibility of using existing nationally constituted corporate forms will remain, this new legal form will have to find its place in competition with national and Community legal instruments. But one can expect its broad acceptance as a result of increasing European industrial cooperation.

Beyond the possibilities for industrial cooperation opened up by the internal market, the protection of intellectual property also plays an important rôle in allowing business to internationalise. Providing speedy and effective protection throughout the market represents a powerful incentive to innovation. This is also true for the Community's dispositions covering data protection, which represent a prerequisite for the free flow of information through the Internal Market.

e) Trans-European networks

Trans-European networks are a direct part of the completion of the Internal Market which contribute to the integration of Community industry and markets by filling in missing links between existing national systems. Beyond the Community, trans-European networks assist in the realisation of the European Economic Area and economic development in Central and Eastern Europe through providing the necessary technical and physical basis for doing business with the Community. Within the Community, networks assist the development of peripheral regions by facilitating their access to central regions.

Mobility of persons and fluid movement of goods calls for dense, rapid and cost effective transport infrastructure for travellers and goods, and the elimination of remaining bottlenecks and improved integration of different types of carriers (rail-road) are of particular importance. The single market also requires a Europe-wide integrated telecommunications network and properly conceived and executed inter-linking national energy distribution systems in the Community. (Work is already in progress in certain areas such as customs, statistics and social security. The third framework programme provides for prenormative research work on system integration to put in place a common methodological and standards base.) Lastly, the

establishment of training networks between universities, firms and research centres of the Community has become more and more necessary to provide an international dimension to training.

2. The Community as a world trade partner

As a necessary complement to internal market opening, an open and vigilant trade policy is required based on the rigorous enforcement of agreed international rules. The Community's approach has always been open, both as a result of its historically strong ties with the rest of the world and as a cause of its leading rôle in international trade. An open approach in turn requires that the rules of the game be respected by all trading partners since the Community's economy will become more sensitive to such practices in line with its even greater openness. A failure to ensure that respect for these rules is maintained would lead to renewed protectionist pressures. The aim of the Community, which is strongly attached to the principle of the balance between rights and obligations, should be to ensure that the markets of the Community's competitors are as open as that of the Community itself.

In this context, the importance of a successful conclusion of the Uruguay Round of negotiations under GATT can not be overstressed. Such an outcome would present further opportunities for Community industry in foreign markets still protected such as the Asian NICs, and to sectors not previously covered by the agreement, in particular services.

The Uruguay Round also provides a splendid opportunity to agree comprehensively on those international rules of the game, which are more appropriate than those in the past to deter unfair practises. The greater openness on international markets must be accompanied by the necessary disciplines for trade to be conducted on the basis of fair and loyal competition. In particular the rules with regard to dumping must be both transparent and tough. There should be no doubt about the Community's intention to apply them consistently. Nevertheless, it must be ensured that the stronger partner does not impose unilaterally its own interpretation on the weaker. Improvements to the disputes procedures should ensure that such rules, once set, are respected. This expressly includes circumvention by third countries.

It is only by progressing on the road to a really open and fair world economy that new advantages can be obtained in addition to those reaped by completion of the Internal Market. The multilateral approach remains the best approach which allows all partners, in particular developing countries, to be associated. The consequences of the globalisation of markets require in addition greater exchange of information between partners at all levels.

III. Accelerating adjustment

A positive approach to industrial adjustment also implies the recourse to policies which can help accelerate the process. These include:

- the development of the technological capacity of the Community. The impact of technology is not limited to a few high technology sectors but affects the whole economy, both in terms of products and production methods. Thus, the mastery of generic technologies such as flexible manufacturing systems and information technologies, new materials and biotechnology possess great importance for the competitiveness of European firms.

For example, information technologies allow considerable quantities of information to be entered, treated, stocked and diffused ever quicker. They concern almost all industrial activities whose management methods are modified. They influence in particular the performance of firms through allowing the development of more

efficient conception, production, simulation and optimisation tools and through facilitating their management.

The significance of the mastery of new generic and diffusing technologies for the competitiveness of almost all economic activities must therefore be clearly understood. In order to remain in the technological race, and a fortiori to make up in certain cases a lag, requires that firms analyse and fully understand the risks and considerable financial and human resources (material and immaterial investments, need to assemble very high qualified teams, often multidisciplinary) required. They must combine long term strategies and short term flexibility in the context of a coherent, stable and predictable environment maintained by public authorities.

The rôle of public authorities should therefore be based to begin with on the realisation of the general importance of technology. In this context, the Community must be particularly attentive to the preoccupations expressed concerning the deterioration of its position in certain areas of advanced technology.

The end result of the combined actions of firms, public authorities and scientists in the field of technology should allow the Community to realise a very high level of global competitiveness.

It is on the conditions governing the conception, development, diffusion and exploitation of technology that efforts to improve the Community's efficacy in this field should be concentrated.

The ability to manage in the best way these four elements largely determines firms' industrial performance and implies that public authorities put in place the framework allowing their full exploitation.

The fact that industrial structures are becoming more and more internationally interdependent also implies that Community industry finds its place in the context of growing cooperation between groups at world level.

The strategic rôle of the diffusion and exploitation of technology means that isolated measures are inadequate for its promotion. It requires that a number of mutually coherent measures be implemented:

- by strengthening the size and cooperative nature of the pre-competitive research effort. It is clear that for the effort of public authorities to bear fruit, firms must remedy the low level of their own investments for technological research, development and innovation. The creation of an appropriate fiscal environment would be of assistance on this matter.
- by the promotion of an active policy for innovation based on the rapid transfer of know-how from basic research through to industrial application, by ensuring in particular the SMEs access to this know-how and their possibility to make best use of it. This policy should as a result have a significant portion devoted to the circulation of information, including that from abroad.
- by the positive effect that a high level of standards, the implementation of technologically advanced trans-European networks and public procurement open to the most sophisticated technologies can have on demand.
- by strengthening training, in particular through specialised centres of higher education.

- **a dynamic policy towards small and medium sized enterprises.** Through their contribution to flexibility in production and their capacity to adapt quickly to new market trends, small and medium sized enterprises play an important rôle in structural adjustment. Policies aimed at maintaining an enterprise culture and at the creation and development of small and medium sized enterprises must be maintained. Efforts to ensure that burdens for the economy are limited are particularly important for smaller firms, as are information and business services and mechanisms to improve business cooperation. Policies to improve access of smaller enterprises to Community and external markets are also important.

Through sharing risk large firms and SMEs can be complementary and increasingly the presence of strong suppliers oriented towards the world market represents an important factor for competitive success. It will be necessary in future to ensure that small and large firms can develop in parallel, in particular through cooperation.

- **better use of human resources,** facilitating the introduction of new technologies and working methods through vocational training and more efficient redeployment through retraining. In the face of impending skill shortages and a much faster rate of innovation, the adaptability and quality of human capital has become a key determinant of industrial competitiveness and the one on which developed economies must place greatest reliance in future. It is important to recognise that up-grading of skills must take place throughout industry and should not be restricted merely to so-called high technology industries. The distinction between "high-tech" and "low-tech" industries is losing its importance. Also in traditional areas there is a permanent requirement for greater sophistication and further qualifications. European industry in the long run can hardly rely on price alone to remain competitive; it must further improve its product technology and exploit fully its reserves of productivity.

- **ensuring the requisite conditions for the development of business services.** The growing complexity of production and management methods requires a dynamic and competitive business services sector. A major objective should be to extend the coverage of the internal market programme to eliminate remaining obstacles to the creation of a common market for these services. The efforts being made to achieve the internal market in the area of financial services will also result in cost savings to industry

C. Ensuring a coherent and effective approach

All policies with consequences for industrial policy must be looked at from a common perspective and be mutually compatible. However, individual policies must be developed and implemented at the appropriate level. Ensuring coherence comprises the following items:

First, as with all Community policies, the principle of subsidiarity by which the Community only tackles those tasks which can be done better at the European level must be applied to industrial affairs. With completion of the internal market, the economically relevant markets in which firms operate often no longer coincide with national boundaries. In this case external economies can be provided rather at European rather than national level. For instance, large scale investment in R & D or infrastructure projects may be more efficiently carried out if national resources are more concentrated.

It will be necessary, therefore, for industrial policy to identify the correct mix of Community, national and local responsibilities. For instance, in research and development a division of responsibility between the pre-competitive aspect of Community financed research and the EUREKA projects which are closer to the market has been developed. Programmes for promoting technology transfer and the access of SMEs to research programmes are also important at EC level. Nevertheless,

national R & D programmes will continue to be dominant, and the co-ordination of these programmes with the Community's efforts must be ensured.

Secondly, the experience of the 1970s and 1980s has shown that sectoral policies of an interventionist type are not an effective instrument to promote structural adaptation. They have failed to make industry competitive by delaying the requirement to implement necessary adjustments, led to grave misallocation of resources and exacerbated problems of budgetary imbalances. Of course, the situation of different industrial sectors in the European economy is not static and from time to time issues affecting specific sectors have to be tackled at Community level.

Especially grave problems of adjustment have been tackled at Community level in the past, for instance for steel, textiles and shipbuilding. Equally, the Community has had to pay special attention, and will continue to do so in future, to areas that can play a key rôle for the development of the European industry and of the European economy as a whole, such as telecommunications, information technology, aeronautics, the maritime industry. It is nevertheless essential that policies aimed at specific sectors are fully consistent with the general principles of industrial policy as described above.

Special importance has to be attached in this context to coordinated efforts for research. There may also be a case for encouraging industry to set up joint research laboratories (but not necessarily Community financed), in particular to further develop sectoral applications for core technologies. Specialised institutes of higher education have also proved important for providing industry with the necessary skills and to facilitate the transfer of research (which often also takes place in such centres) to industry. Particularly high levels of training in specialised skills are also required in order to facilitate the introduction of modern manufacturing technologies.

Thirdly, greater consultation with the representatives of industry is required in order to strengthen consensus in the Community and to guide European policies towards the real problems. In developing policies and guide lines, it is particularly important that the representatives of industry be fully consulted at the earliest possible stage. This should include consultation with the representatives of SMEs as well as with those of larger enterprises. Also, employees representatives must be given sufficient opportunities to make comments.

I. Maintain the impetus towards international investment

Growing internationalisation of the economy requires that, in addition to their activities on the internal market, Community operators are able to increasingly invest abroad to implement coherent global strategies. Such investment should not be seen as in contradiction with efforts to improve competitiveness within the Community but as complementary to them. European firms are already undertaking substantial industrial investments in third countries, particularly the United States, but the changing situation within Europe requires an added impetus to this process. If the emerging market economies in Eastern Europe are not to falter in their progress, they will require a substantial transfer of technology, know-how and capital. In view of the geographic, historical and political ties of the Community with these countries, efforts will need to be made to develop the flow of investments by European firms towards Eastern Europe. But also in the Far East, European industry has to expand its presence. The obvious difficulties with market access must not lead European industry to neglect these important markets. In this context, the analysis of conditions likely to assist the development of firms' investments outside the Community should be more especially examined. The Community must support these efforts by parallel market opening.

II. Strengthen competition internally and externally

Completion of the internal market should increase competition on the Community market. However, it will be necessary to ensure that the movements towards concentration which are taking place in anticipation of the single market do not obstruct the free play of market forces. The tendency for certain groups to acquire a dominant position under the guise of achieving a sufficient critical size should be checked. In many ways, a series of cross-border mergers which leave no firm in charge of significant markets can lead to stronger competition between the resulting groups than the national champions option. The way in which concentration takes place is therefore as important as the degree. In order to maintain competition on the Community market, the necessary legal basis has now been put place. It remains to elaborate the appropriate means of evaluating the industrial impact of such concentrations. The implementation of the Regulation will entail a full analysis of the markets concerned.

Respecting competition on international markets will become much more important. Globalisation of markets and the ever greater dimension of major groups requires that mechanisms be created that can avoid the creation at international level of monopolistic or oligopolistic situations which would be unacceptable at national or regional level. The even greater impetus towards liberalisation, and attendant possibilities for international firms, opened up the Uruguay Round could lead to an increase in those anti-competitive tendencies and dominant positions which are already visible for such markets as data processing and telecommunications equipment or consumer electronics. Reflection on the means to confront this issue is required, both within the Community and at international level.

III. Promote the Community's advantages

Industrial integration is to be regarded as an instrument of economic and social cohesion. Regional diversity within the Community is one of its advantages, allowing the creation of new sources of competitive advantage through appropriate specialisations. The adaptation of regional industries to completion of the internal market therefore can constitute an important vector for the development of EC industry. In order to achieve this, efforts already undertaken through the Structural Funds to ensure that the weakest regions develop the type of infrastructure and quality of human resources essential for the success of their firms in a competitive environment should be pursued. Technical assistance should be supplied to certain parts of industry, for example through programmes of Community initiative which attempt to improve the capacity of SMEs in less developed regions to compete. In a dynamic market, restructuring can take place without the negative consequences on employment and output that occurs in a period of recession. Underutilised resources can be put to work productively and already the advantages of several regions, particularly in the south of the Community, are also attracting investors from elsewhere in the Community.

D. Conclusions

I. The Commission proposes that the Council approves:

- the Commission's analysis of the degree of industrial adjustment achieved so far and of its on-going character which is required for the global competitiveness of European industry.
- the concept that Community industrial policy should promote permanent adaptation to industrial change in an open and competitive market. It is based on the principle of free trade and on the competitive functioning of markets around long term industrial and technological perspectives.
- the principle that this policy be implemented through the creation of a favourable environment for firms' initiative through the coherent recourse to all those Community activities having an impact on industry.
- that industrial problems at a regional or sectoral level should increasingly be resolved by horizontal measures.

II. In order to implement these principles in the current competitive context, the Commission proposes that the Community and Member States :

1. Improve the functioning of the internal market:

- through ensuring its completion on the basis of the White Paper's approach, properly transposed and enforced at the national level;
- through ensuring better control of public financial assistance to industry, in particular when this assistance affects highly capital-intensive investments;
- through ensuring more coherence between different Community and national activities as far as they concern industrial policy. In order to achieve this and assure subsidiarity, it is important to develop dialogue and the exchange of information;
- through accepting the necessity for this policy to take into consideration developments resulting from the globalisation of markets, production and operators, as well as the industrial policies of the Community's main competitors.

2. Improve the functioning of the world market:

- through a continuous effort to further open up and strictly implement the multilateral trading system;
- through facilitating the flow of international investment;
- through vigilance against unfair commercial practices, and the will to deal with them;
- through facilitating cooperation with international partners of the Community, amongst others in Central and Eastern Europe;
- through ensuring that the markets of the Community's competitors are as open as that of the Community itself on the basis of the principle of balance between rights and obligations.

3. Pursue those positive adjustment policies aimed at building a favourable economic environment for private initiative and investment in the Community;

- by maintaining a macro-economic framework directed towards stability and the facilitation of medium and long-term funding for industrial enterprises. In the current context of growing international economic uncertainty, a dependable macro-economic framework is more and more necessary for business;
- by ensuring that the efforts of firms, the Community and Member States for technological research and development are strengthened, through greater cooperation between the parties concerned and in particular between producers and users of new technologies, and through exploiting the industrial potential of innovation and technological research and development policies at national and Community level;
- by strengthening policies which take into account the special requirements of SMEs and the promotion of new business formation. In particular, national and Community actions to support intra-Community and international cooperation between SMEs and large firms should be developed;
- by directing national and Community structural instruments more towards backing structural adjustment and strengthening firms' competitiveness in less developed regions;
- by recognising that a high level of environmental protection offers both challenges and opportunities for industry, and that competitiveness and protection of the environment are not in opposition to one another;
- by implementing effective policies to develop human resources, in particular through a life-long approach to the acquisition of skills based on detailed knowledge of industry's requirements;
- by supporting the implementation of trans-European networks required for the proper functioning of the Community and wider European markets;
- by ensuring that a sufficiently attentive examination of industrial development is made in order to ensure that the necessary requirements for adjustment are met.

STRUCTURAL ADJUSTMENT

I PREREQUISITES

- Competition
- Economic Context
- Educational Attainment
- Economic & Social Cohesion
- Environmental Protection

II CATALYSTS

- Internal Market
- Commercial Policy

III ACCELERATORS

- Research, Development, Technology, Innovation
- Training
- Small & Medium Size Enterprises
- Business services

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EC INDUSTRY IN THE 1990s

A. The global setting

The level of integration already achieved by the world economy means that EC industry will be confronted by an open and competitive environment. This environment is one in which competition increasingly takes place in a global fashion on all the major markets of the world. The challenge for EC industry must therefore be to meet competition world-wide and not only on its own domestic market.

I. EC trade performance

A first indication of how the EC stands compared with its major competitors can be gleaned from the development of export shares. Since it is natural for the EC share in world exports to fall as more and more countries enter the development process through trade, the share in world exports from developed countries represents a better measure of competitive performance. On this basis, the EC appears to be holding its own with an identical export share in 1987 as in 1970 (fig. 1). A steep fall occurred at the beginning of the 1980s, but this has now been stabilised, without, however, recapturing export share lost then. This performance is all the more remarkable in that the second half of the decade has also exhibited exceptionally strong intra-EC exports, which now represent nearly half of world exports from industrialised countries (intra-EC exports excluded). Much more dramatic changes have characterised the Community's main competitors with the US losing share heavily throughout the 1970s and first half of the 1980s at the expense of Japan. Subsequently, the Japanese share has stabilised and that of the US has staged a recovery.

Throughout the 1980s, the EC maintained a surplus on its extra-EC trade in manufactures; a surplus which, combined with the effect of the sharp fall in energy prices in 1986, was sufficient to provide an overall trade surplus in that year (see fig.2). Since the middle of the decade, however, the balance on manufactures has been declining.

It is not clear which combination of weakened price competitiveness, strong domestic demand in Europe and the effects of enlargement is responsible for this weaker export performance by the Community in the second half of the decade. At the same time intra-EC trade in manufactures experienced growth as strong as that in third countries imports (fig.3). It is probable that, notwithstanding the effect of enlargement, industry has been anticipating completion of the internal market and using the home base to develop the necessary scale of operations to compete effectively on third countries markets, rather than displaying any reduced capacity to export.

II. EC-US-JAPAN bilateral economic relations

Relations between the EC, US and Japan as the major markets of the world do however display weaknesses for the EC as a global competitor. Trade relations between the EC and the US and between the US and Japan are well developed (fig.4). Those between the EC and Japan much less so, particularly in the direction EC to Japan. Since increasingly global competitors are manufacturing locally in order to benefit from proximity to markets, to tap local R & D capabilities and to diminish trade frictions, foreign direct investment has also become a factor in the capacity to compete globally. Here again the EC-US link is strong in both directions (although to the EC advantage), much weaker in the case of US-Japan and very weak between the EC and Japan - again particularly as concerns European investment in Japan.

Since Japan has become the first market on which so many new products are introduced and tested, this represents a telling weakness.

III. Productivity

Looking behind the measures of international performance to the underlining reasons behind them, the rôle of productivity needs to have particular emphasis placed on it. Higher productivity enables higher standards of living to be achieved and also provides a key competitive edge. In addition, although all countries can not be improving their world market shares simultaneously, all can be upgrading their economies through improved productivity.

The measurement of productivity is fraught with problems of definition which are exacerbated at international level. GDP per person employed represents one approximate measure for overall labour productivity. In 1988, US productivity remained substantially higher than that in the EC or Japan. The low level of aggregate productivity in Japan can in part be attributed to low productivity in agriculture and many services. Data from the mid-1980s indicate that Japanese manufacturing productivity was substantially above that in the rest of the economy, unlike the EC, and that Japanese manufacturing productivity should exceed that in the EC without achieving that of the US as yet.

As is well known, productivity growth rates fell substantially world-wide after the first energy shock (fig.5). Since then, Japan has increased GDP per person employed by around one percentage point per annum faster than the EC. In addition, US performance has begun to improve after decades of poor growth. For growth in manufacturing productivity, the US Department of Labor collects data for seven EC countries as well as the US and Japan for output per hour, which represents a much stricter definition of labour productivity (fig.6). Over the last decade, Japanese manufacturing productivity has been increasing even faster than for the economy as a whole, by two percentage points more than that for the EC and the US. Amongst Member States, productivity growth varied widely, with Belgium and the UK achieving high rates of manufacturing productivity growth and Denmark and Germany rather low ones. The current situation and trends with regard to international productivity, therefore, give no grounds for complacency in Europe.

However important, labour productivity can only present a partial picture. The productivity of capital, or in other terms the efficiency with which capital is used, also determines the degree to which higher living standards and improved competitiveness can be achieved. Available data on capital stocks do not, however, provide a reliable basis on which to make international comparisons. Nevertheless, it would appear that improvements in manufacturing technology and the introduction of flexible manufacturing systems are raising both the efficiency with which capital is used and labour productivity simultaneously. Not only is there less danger of substitution of labour by capital in such a process, but also the economic gains to be reaped are much greater. In turn, a high level of organisational skills has become required to effectively apply the current round of investment.

B. A much improved economy

I. Non-inflationary growth recovered

After recovering from the oil price shock of 1979/80, real growth in GDP accelerated steadily to reach a trend of 3% per annum; a trend which it should be possible to maintain in 1990 and 1991 (see fig.7). Employment, for which the European performance was particularly poor in the 1970s, is now increasing at around 1% per year. After reaching a peak of 1.7% in 1989, the rate of increase is forecast to slow over the next two years, but still to remain substantially positive.

Nevertheless, the rate of unemployment, after reaching a peak of 10.8% in 1985, remains unacceptably high at 8.5% of the labour force. Continued strong growth in employment over the medium term in combination with the diminution in the number of young people coming on to the labour market will be required to substantially reduce the current rate.

The good output and employment performance has been sustained by the strong action taken in the first half of the decade to reduce inflation. In 1986 and 1987, the slow-down of inflation was further facilitated by the reduction in oil prices and the appreciation of Community currencies.

From 1988, inflation once again began to rise through a combination of increases in the price of imported raw materials, a depreciation of the ECU against the dollar, a certain acceleration in wage costs and the effects of growing pressures on productive capacities (which reached the historic high of 1973 again in 1989). Prompt reaction by monetary authorities was expected to stabilise price increases at around 5%, before falling to 4.5% in 1991. First indications on the likely result of the Gulf crisis are that the effect on growth should be modest but that on inflation is more serious. Combined with growing domestic inflationary tensions, the crisis therefore presents cause for concern. Avoiding a return to an inflationary wage-price spiral must be a high priority of policy makers. Such stabilisation inevitably brings with it a rise in interest rates, which are forecast to increase in real terms.

External balances on current account improved throughout the first part of the decade, moving into surplus in 1983 to reach 1.4% of GDP in 1986. At the end of the decade, the Community has been experiencing a small surplus, which is forecast to continue in 1990 and 1991.

II. The path of adjustment

When the means by which the Community arrived at this favourable outcome are examined, it is clear that moderation in wages played a decisive part. The falling share of wages in GDP gave rise to improved profitability (left hand scale of fig.8), which helped to fuel investment, finally resulting in higher employment (right hand scale). Investment in equipment began to increase strongly in 1985. Since then strong momentum has been maintained, except for a temporary interruption in 1986. As a result total investment for the decade increased by 30% and that for equipment by 60%.

Of particular importance has been the higher employment content of growth. In the 1960s annual growth of 4.8% barely created 0.3% of new employment. Today, 3% growth is accompanied by net annual employment expansion of more than 1%. This demonstrates the importance of macro-economic adjustment in the employment creating process rather than a narrow sectoral focus, which in the past led to defensive policies in order to safeguard jobs.

III. Resumption of convergence

Another important element of economic recovery has been the resumption of real convergence as least favoured regions and countries have been catching up since the mid-1980s (with a decline of more than one fifth in disparities in national per capita GDP between 1985 and 1990 as measured by the weighted coefficient of variation). In fact Spain, Portugal and Ireland have all achieved impressive results, growing faster than a rising Community average. As in the 1960s, better economic growth throughout the Community is going hand-in-hand with a gradual decline of economic disparities. Only Greece amongst the less advanced Member States failed to participate in this process.

In Spain and Portugal, the acceleration of growth was led by investment. Thus the share of investment in total GDP expanded by more than one fifth to about 26% in Spain, and by almost one third to about 30% in Portugal - substantially above the Community share of 21%. In Ireland, the acceleration of growth was export led. Convergence therefore has been placed on a sustainable basis of improving productive capacities and competitiveness.

C. A revived EC industry

I. Production

Industrial performance during the 1980s was marked by the very sharp recession at the beginning of the decade after the second oil shock and the long subsequent period of recovery (see fig.9). The recession in industry was much deeper and more prolonged for investment (which fell by 6%) and employment (with 4.4 million jobs lost) than for production (which fell by 3%). Certain industries, in particular steel for which employment fell by 40%, were much more seriously affected still. Such developments led to the belief at the beginning of the decade that European economies were inevitably sinking into a state of deindustrialisation.

In a convincing rebuff to such gloomy prognostics, production in industry has expanded steadily since 1983. It has reached a peak of 4% per annum during the last two years, and even more for some of those sectors which most suffered from the recession (steel, shipbuilding). All of the increase in production came from manufacturing industry with both mining and construction industries registering substantial declines over the decade as a whole. As would be expected from the strong investment performance of the economy, capital goods showed the greatest production growth. In spite of the strong recent performance in the Community, industrial production grew substantially faster during the 1980s in both the US and Japan than in Europe - mainly as a result of faster recovery from recession (see fig.10).

Clearly an average for industry as a whole will disguise very different performances for individual sectors. For instance, annual average production growth over the last decade varied between -2% for footwear and clothing to 5.8% for plastic products (see fig.11). The greater the sectoral detail, the greater the variation (see table 1). Very large sectors such as the chemical, mechanical engineering, electrical engineering, and food, drink and tobacco industries - each of which accounts for over 10% of industrial output - contain many different segments. Each segment can behave differently and for this reason very aggregated data are of little value for sectoral analysis.

II. Investment and employment

Industrial recovery has been sustained by investment which increased by 3.7% per annum over the decade as a whole, and by 8% in both 1988 and 1989. This strong investment performance represents one of the most important foundations for industrial expansion in the coming decade and optimism about the future for EC industry.

From 1987, industry also stopped shedding employment and since then has been making a contribution to net job creation of around 500,000 per annum.

Not less important than the recovery in output, investment and employment has been the structural adaptation of EC industry which displays a number of common features across industries of differing levels of maturity, industrial structure and demand patterns. Sectors such as iron and steel, shipbuilding, automobiles, mechanical engineering, chemicals and consumer electronics all incorporated much

higher levels of advanced technologies so that it is no longer possible to speak today of high or low technology industries but only of products that may have differing levels of sophistication. As a corollary, technological innovation has become a prime source of competitive advantage (see below). In turn, requirements for R & D and the level of labour qualification increased dramatically. These trends are forecast to continue and even to intensify over the coming decade.

It is important, therefore, to avoid falling into the trap of considering certain industries as condemned to technological obsolescence and ripe for transfer overseas to lower cost sources of supply. However, the generalisation of technology as a source of competitive advantage implies that control of key technologies such as advanced materials and electronics, information systems, integrated manufacturing systems, life-science applications, which are important for a great number of industries, has become of crucial significance. This requires that excellence in core technologies be maintained and the appropriate mechanisms for their adaptation to and diffusion amongst individual industries be developed. Certain industries also play a key rôle through the technology which is incorporated in their products and widely used as building blocks for other advanced products in a variety of industries. Semi-conductors represent a prime example of such products.

D. Competitiveness of EC industry

I. The competitive situation

To assess the current competitive position of EC industry, the examination of sectoral trade positions (or so called "revealed comparative advantage" analysis) remains a very useful method. Nevertheless, such analysis tells nothing about why individual industries should be in such a position, nor how their situation is likely to develop in future. It provides more of a photograph than an explanation.

Information is available in sufficient detail (nearly 100 different product categories) for 1988. Since rapid shifts from surplus to deficit or vice versa can occur for industries for which trade represents only a small fraction of production, a combination of high shares of production exported and the ratio of exports to imports has been used to categorise the competitive position of individual industries. For instance, either a positive trade balance combined with a very high share of production exported or a medium share of production exported (10-30%) and very high export to import ratio (above 3) have been deemed to constitute sectors for which the Community is very favourably placed.

The Community is favourably or very favourably placed for a large number of product categories - 44 - but unfavourably or very unfavourably placed for a limited number of ones - 23 - (table 2). Far from being concentrated in a few areas of strength, products for which the Community is competitive cover many different types, including some in industries not generally considered to be amongst European strengths (steel tubes, electric lighting and industrial electrical apparatus, furniture...). Rather than reasoning in terms of whole industries, it has become more worthwhile to reason in terms of specific segments. Even for industries for which the Community is not generally well placed, producers can continue to be competitive for specific segments. Thus, it is important to develop strengths across the board that enable European producers to compete effectively across a wide spectrum of different segments.

When assessing overall competitive strength, the question also arises to what extent export specialisation is a source of strength. The highly visible export success of certain Japanese industries, notwithstanding the broad range of products successfully exported from Japan, has led to a certain interest in specialisation strategies (targeting). Such specialisation inevitability brings with it greater vulnerability to

changes in market conditions, so it must ensure significantly improved performance to be justified.

To a great extent specialisation can be associated with size, and within Europe such successful international exporting nations as Sweden and Switzerland have rather specialised structures. EC specialisation takes place at national and regional rather than Community level (for instance Germany in capital goods, Italy in consumer goods, Belgium and Denmark in transport and Luxembourg and the UK in financial services). Since these specialisations correspond to particular conditions which make those countries competitive in certain areas, similar specialisation Community-wide should hinder rather than enhance competitiveness.

II. Price competitiveness

Certain determinants of competitiveness can be measured. Falling exchange rates improve price competitiveness by making exports cheaper and imports more expensive. Over the decade as a whole, EC effective nominal exchange rates relative to industrial countries fell by 30%. The dollar nominal exchange rate rose by 50% before returning to a slightly higher level than at the beginning of the decade, and Japanese rates almost doubled.

Falling effective exchange rates provide a short-term boost to competitiveness but over the longer term the ability to sustain higher exchange rates is a sign of improving competitiveness and rising living standards. Rather than adopting policies to depreciate currencies, exchange rate stability enabling reasonably sound forward planning by firms is a desirable objective. Within Europe, it has been the aim of the exchange rate mechanism of the European Monetary System during the last decade to provide such stability.

Real unit wage costs fell throughout the 1980's to reach their lowest ever level over three decades. This accomplishment was all the more remarkable for outperforming both the US, where unit wage costs remained stable and Japan (where costs declined at half the EC rate). Combined with exchange rate movements, unit labour costs have also been falling during the decade, contrary to US in which they rose sharply to the middle of the decade before falling back again and Japan, in which they have been rising steadily.

The cost to firms of financing investments also represents a significant price element of competitiveness, particularly in capital intensive industries or ones in which technological change is making previous investment obsolete. Since Japanese firms finance a substantial portion of their activities from debt rather than equity, long term real interest rates are of great importance to them. Over the decade as a whole, real interest rates averaged 4.4% in Japan compared with 4.2% for the EC and 5.2% in the US. With the upturn in investment, however, the rate at which investment needed to be financed corresponds more closely to that in the second half of the decade, when Japanese real interest rates still averaged 4.4% compared with 5.4% for the US and 5.5% in the EC. Throughout the decade, Japanese rates reacted faster to inflationary pressures and both rose and declined earlier than in the US and, particularly, in Europe (fig.12). The result has been a low risk premium similar to that encountered by Germany within the EC, in which low inflation countries also experience generally lower real interest rates.

Debt financing has a powerful advantage over equity and retained earnings as a source of funds because interest payments are treated as a pre-tax expense for fiscal purposes. The combination of low interest rates and a high debt/equity ratio can provide, therefore, a powerful competitive advantage through low cost funds. However, firms are more vulnerable to cyclical falls in earnings, because interest must be financed out of cash flow. Either they must reduce borrowing to be sure to

be able to meet interest payments, or they must be able to rely on a financial system which is supportive of firms with short term cash flow difficulties.

A more complete treatment of financing costs would cover all the possible sources of funds, and the effects of both inflation and taxation on profits and depreciation to calculate the cost of capital. Since the cost of capital will vary with both the sources of finance and the nature of the investment, it is necessary to make comparisons on the basis of different categories of investment. According to the Federal Reserve Bank of New York, Japanese firms enjoy a low cost of capital across a range of investment types, but more particularly for research and development projects. German firms enjoy a comparable low cost of capital for equipment and machinery but intermediate costs for R & D projects between those in Japan and those in the UK and US (see fig.13).

A low cost of capital implies that the hurdle rate that a project must meet before being accepted as viable will be correspondingly lower and the investments made correspondingly greater. These commercial investments of course then produce results in the form of a high level of output, new product innovation and ultimately in gains in market share. Over the last decade, confirmation of the impact of the cost of capital on investment can be sought in an investment share in the economy of 30% in Japan, 20% in Germany and 17.5% in the US and UK.

III. Other factors of competitiveness

It is not sufficient to control factor prices and to maintain attractive exchange rates to achieve international competitiveness. At a time of rapid technological change associated with substantial economies of scale, differentiated products, more flexibility and globally operating firms, most sources of competitive advantage are created rather than endowed. More efficient use of materials and development of substitutes makes the possession of raw materials of relatively minor importance, and with increasing automation access to state of the art technology becomes increasingly important.

Measuring the non-factor price component of competitiveness represents no easy task. Foremost amongst factors of competitiveness lies quality. Increasingly sophisticated consumers place product quality - in design, in manufacture, and in performance - high amongst their purchase criteria. Low price does not compensate for poor quality, and, since consumers can not be obliged to purchase products they do not desire, producers must meet the competition first of all in terms of quality. If some quality attributes can be reflected in objective assessments - such as the number of breakdowns encountered by model of car - the ability to command a premium price for a product constitutes the best indicator of superior competitive performance.

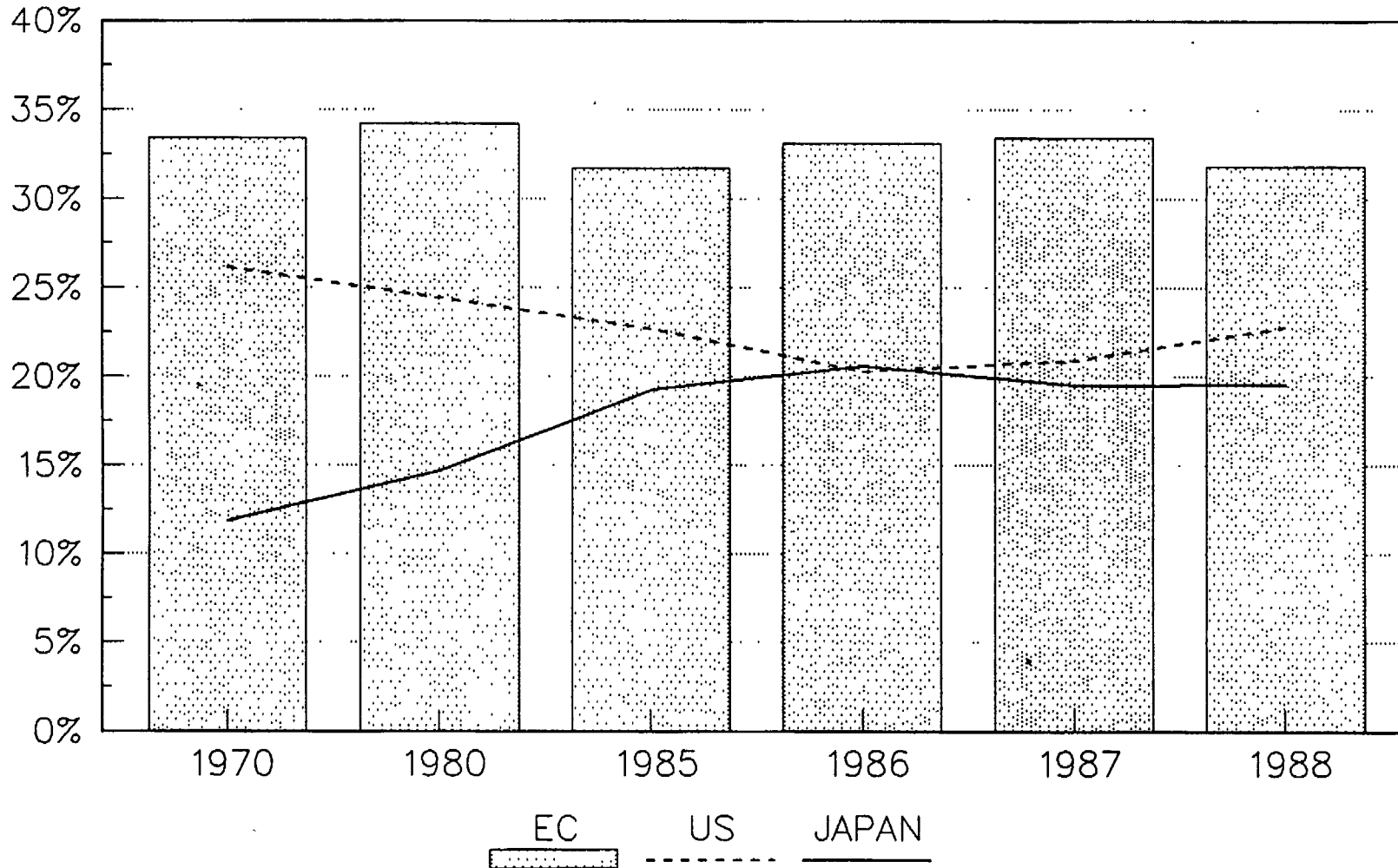
Modern manufacturing systems have largely resolved the trade-off to be made between quality and price through the cost savings produced from low defect rates. Such systems, however, are complex to run and require great organisational skills in addition to technical expertise and capital. In turn, these skills have become a source of competitive advantage which are not easily copied.

In the same way, in a strategic and commercial environment undergoing rapid change, access to certain business services (management consultancy, legal services, marketing services, human resource management, communications and information services) become a major factor in the successful adjustment of firms and their products to market conditions, and thereby a source of competitive advantage.

With much faster rates of new product introductions, innovation has become a major source of competitiveness. Capacity to innovate has been found to be only weakly

correlated with input measures such as overall R and D expenditure. Of more significance are the capacity to rapidly implement new technology in both products and processes, and to control key technologies which precondition commercial innovations. This implies that the process by which knowledge is transferred from basic research via pre-competitive research to commercial applications and the ability to generate incremental improvements in technology at all stages of the production process are of great importance. In turn, this points to the ability to manage innovation as a significant element in competitive success. It also implies that firms own efforts in the field of R and D and innovation play the decisive rôle in competitiveness.

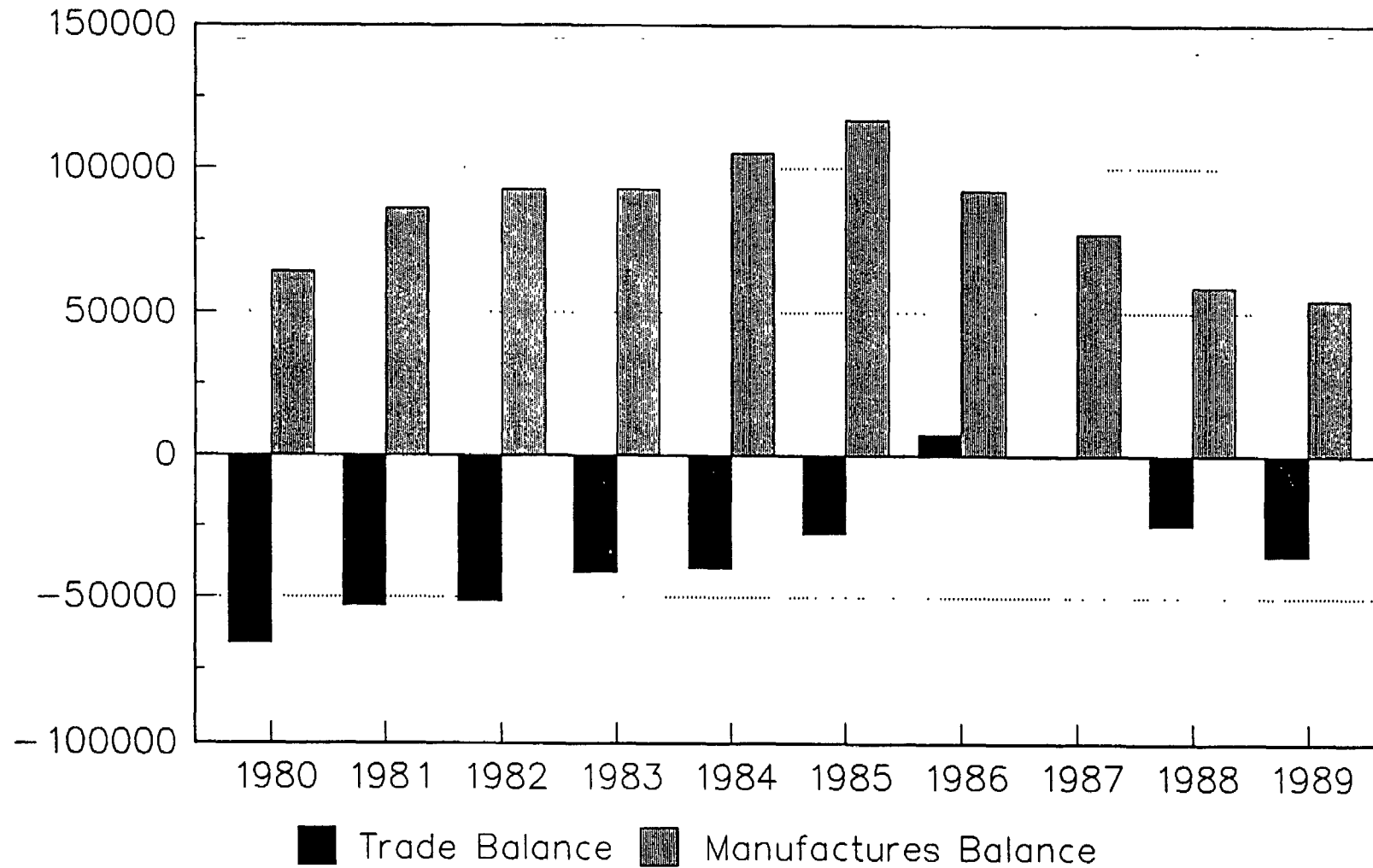
EC, US & JAPANESE SHARES OF WORLD EXPORTS FROM INDUSTRIALIZED COUNTRIES



Source: UN Monthly Bulletin of Statistics

DEVELOPMENT OF EC TRADE BALANCES 1980-1989

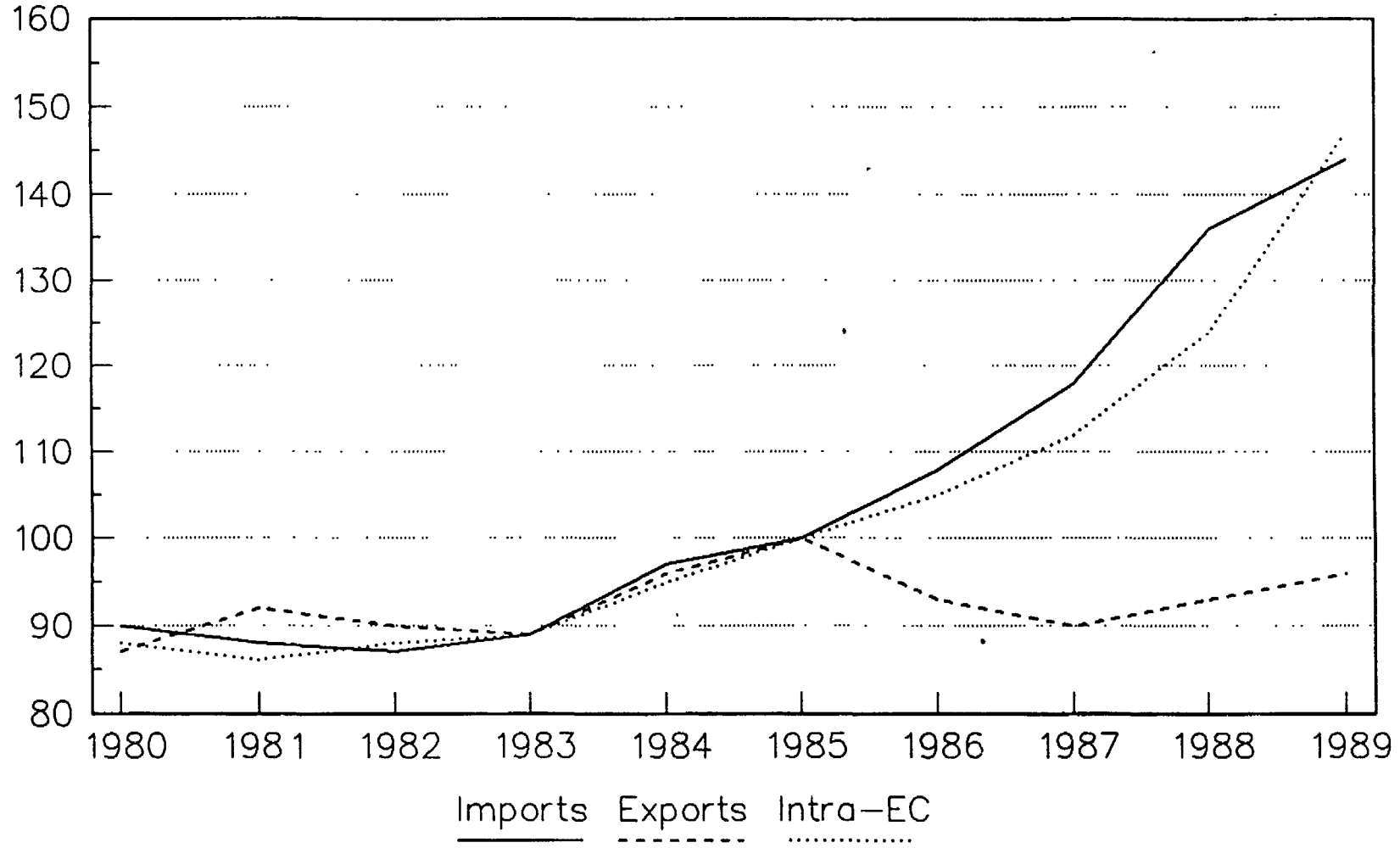
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Source: EUROSTAT

Fig. 3

DEVELOPMENT OF TRADE IN MANUFACTURED GOODS by volume 1985 = 100

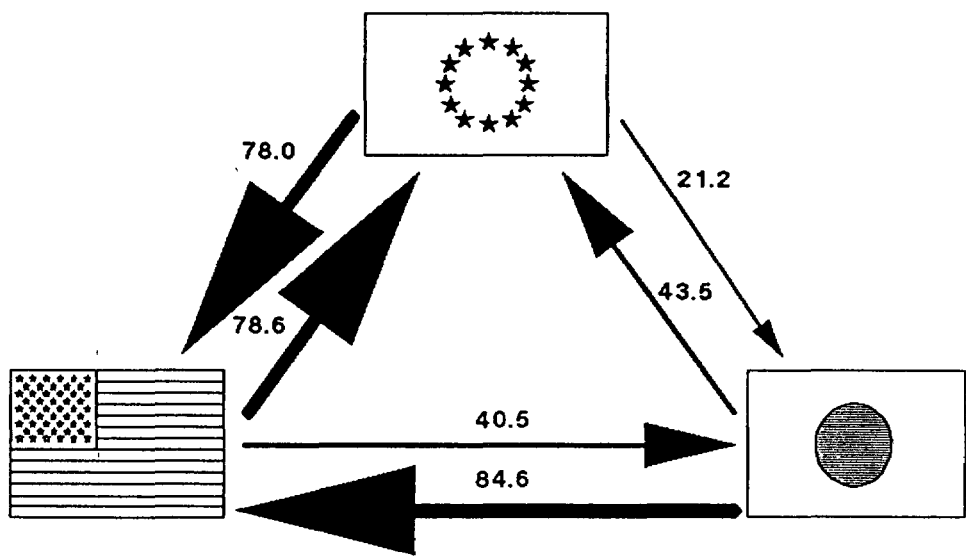


Source: EUROSTAT

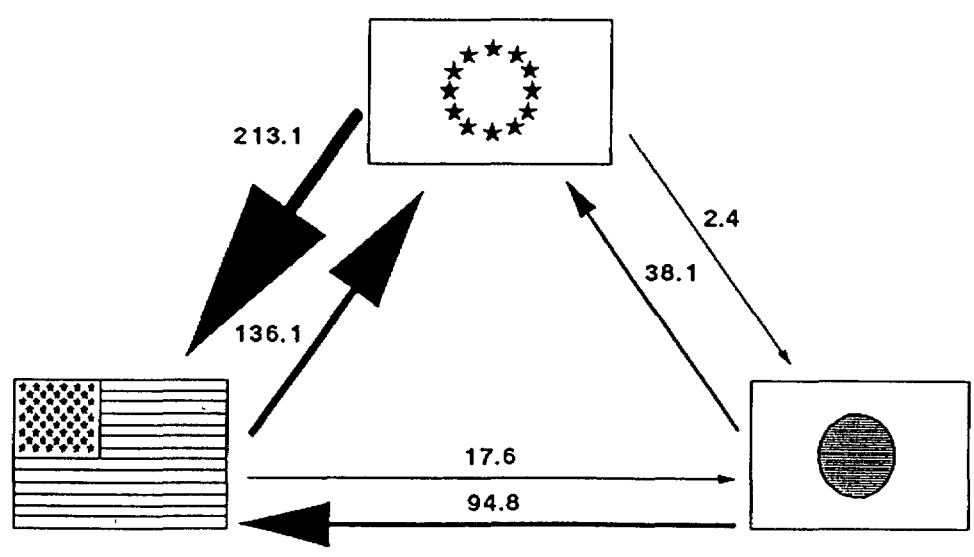
EC-US-JAPAN

1989 Billion ECU

Exports

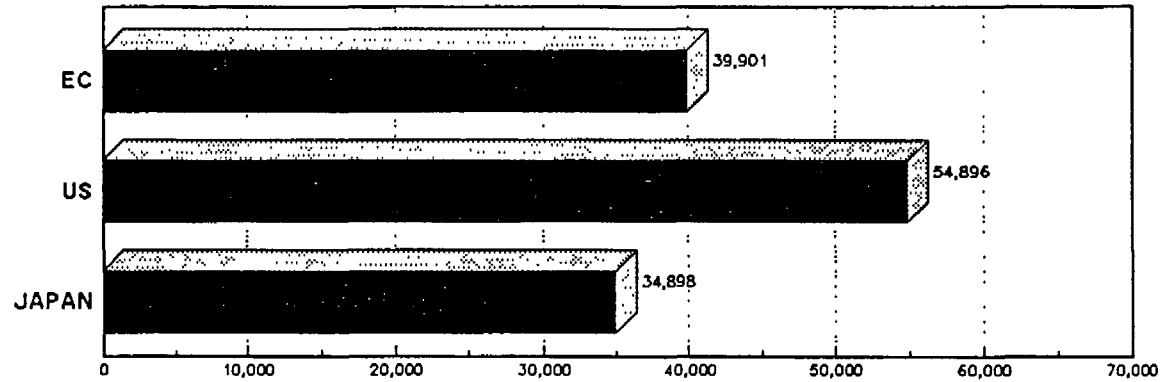


Stocks of Foreign Direct Investment



LEVELS AND DEVELOPMENT OF PRODUCTIVITY

GDP PER PERSON EMPLOYED
1988 In purchasing power parities



GROWTH IN GDP PER PERSON EMPLOYED
% per annum

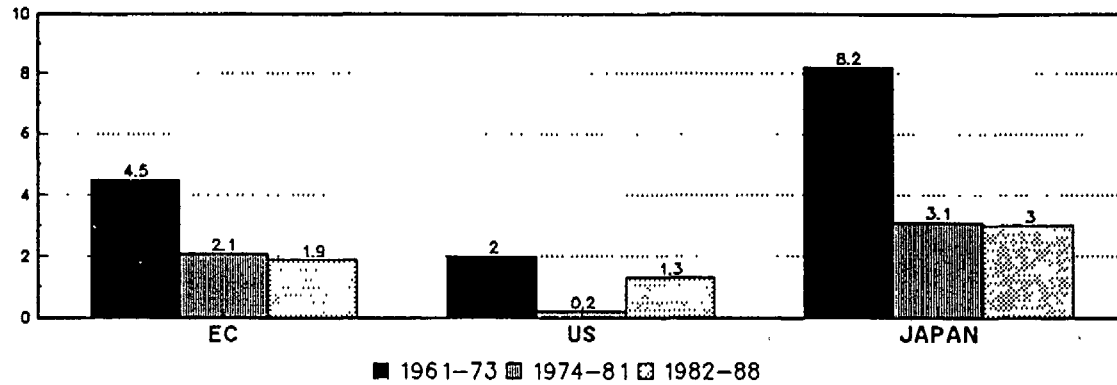
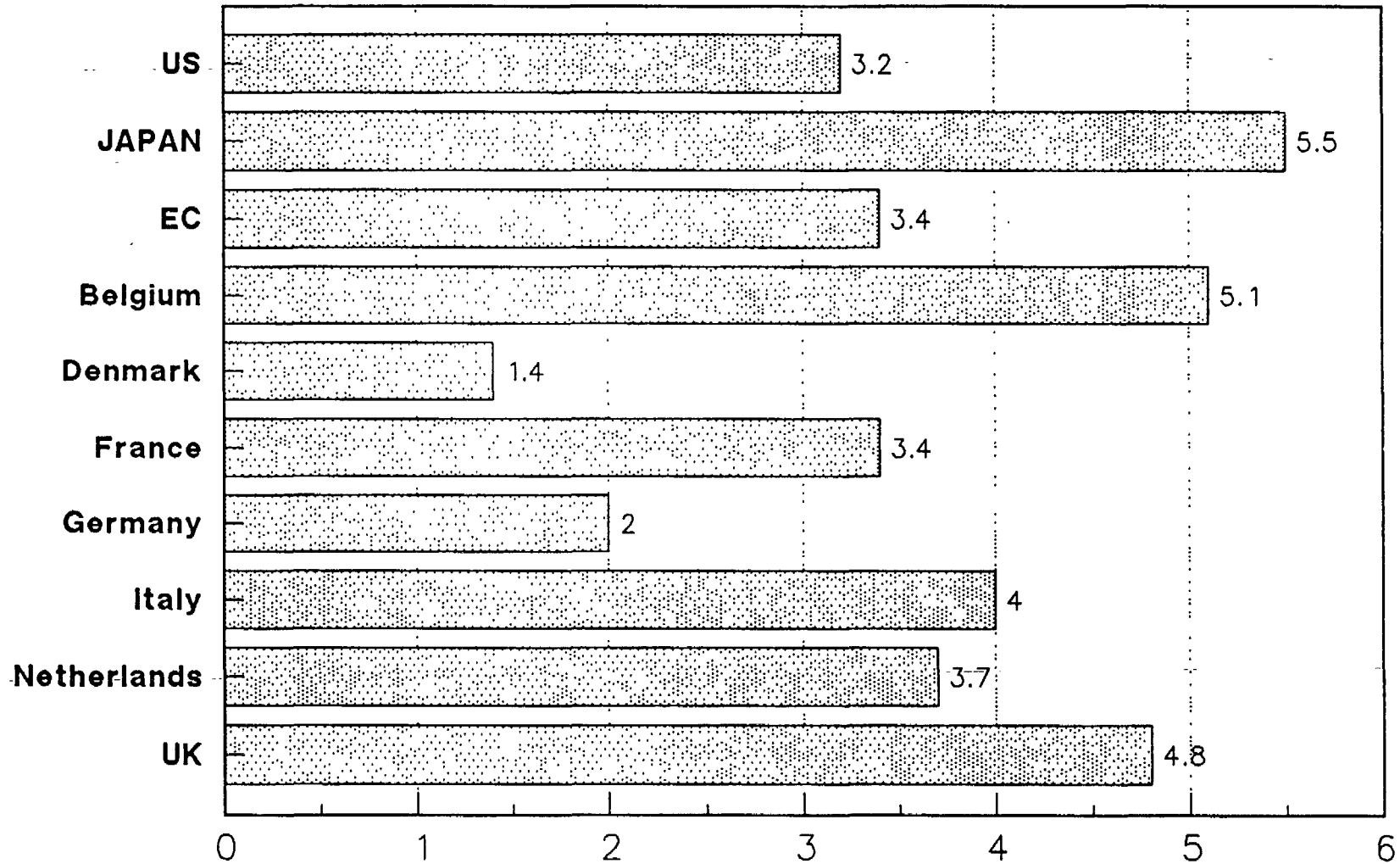


Fig. 5

Development of Manufacturing Productivity

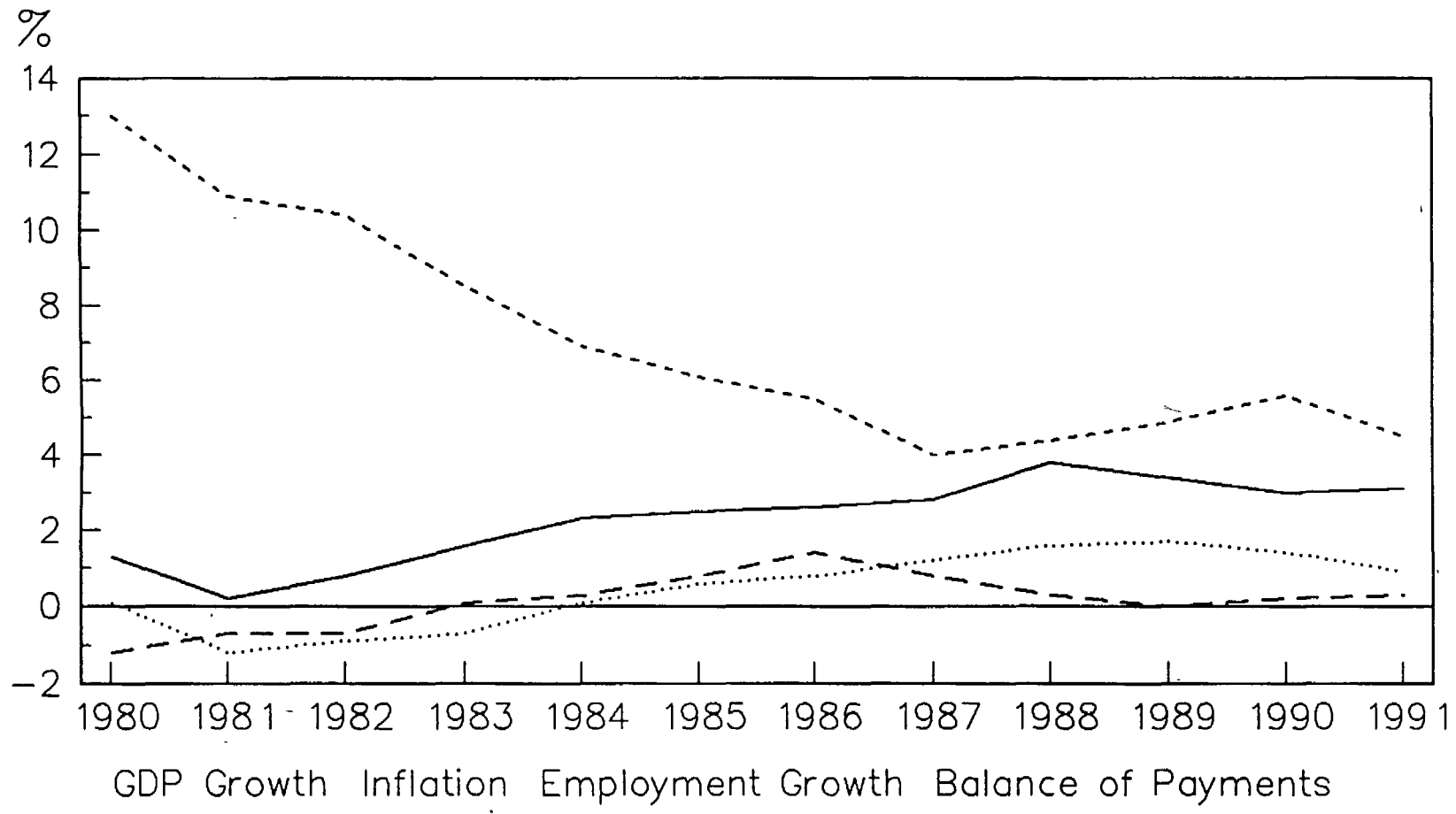
% per annum 1979-1989



Source: US Department of Labor

MAIN ECONOMIC INDICATORS

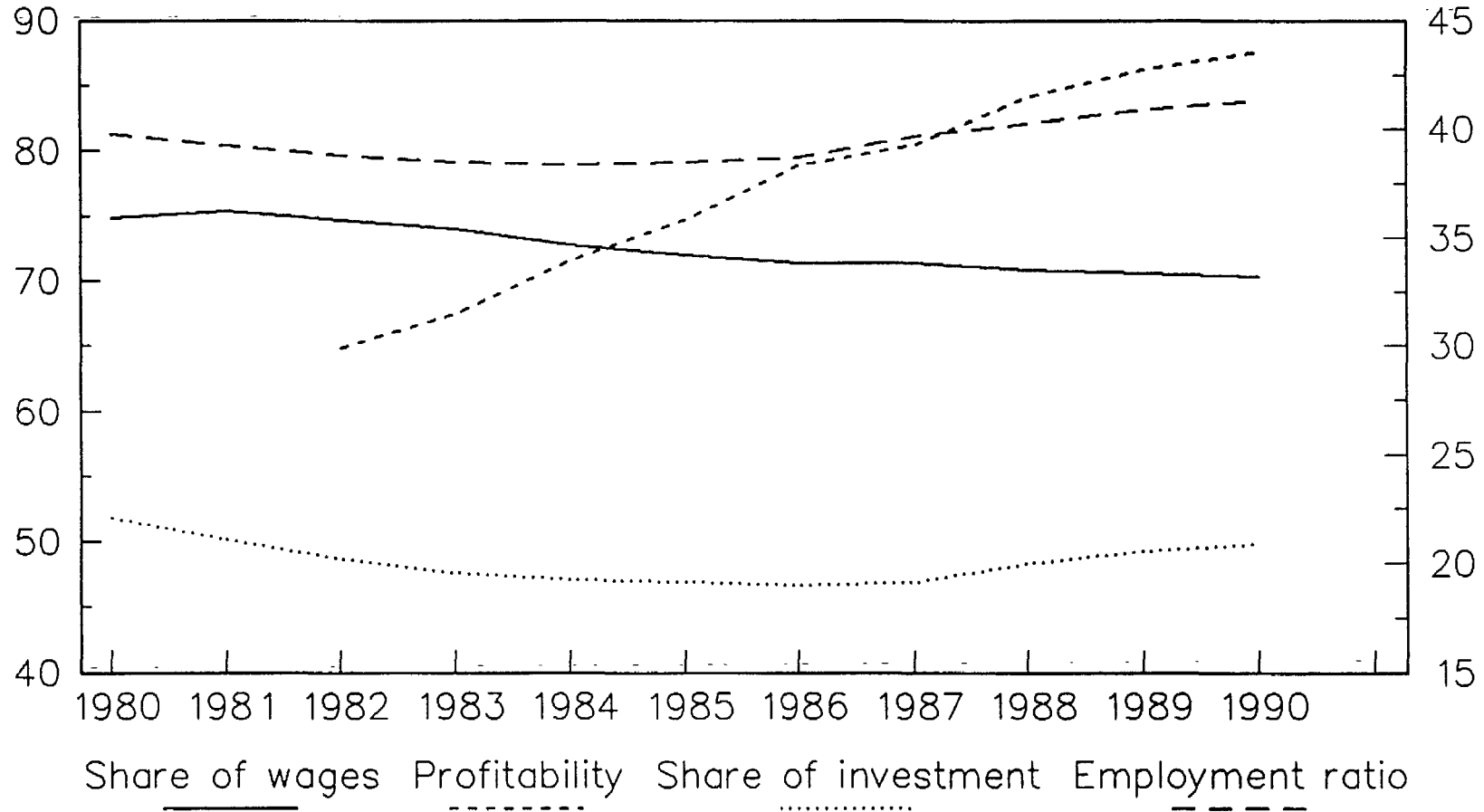
(annual % change in GDP, GDP prices, employment,
& balance on current transactions as % of GDP)



Source: European Economy and Economic Budgets
1990-1991

ADJUSTMENT INDICATORS

(adjusted wage share in GDP, profitability*, investment share in GDP, employment ratio*)



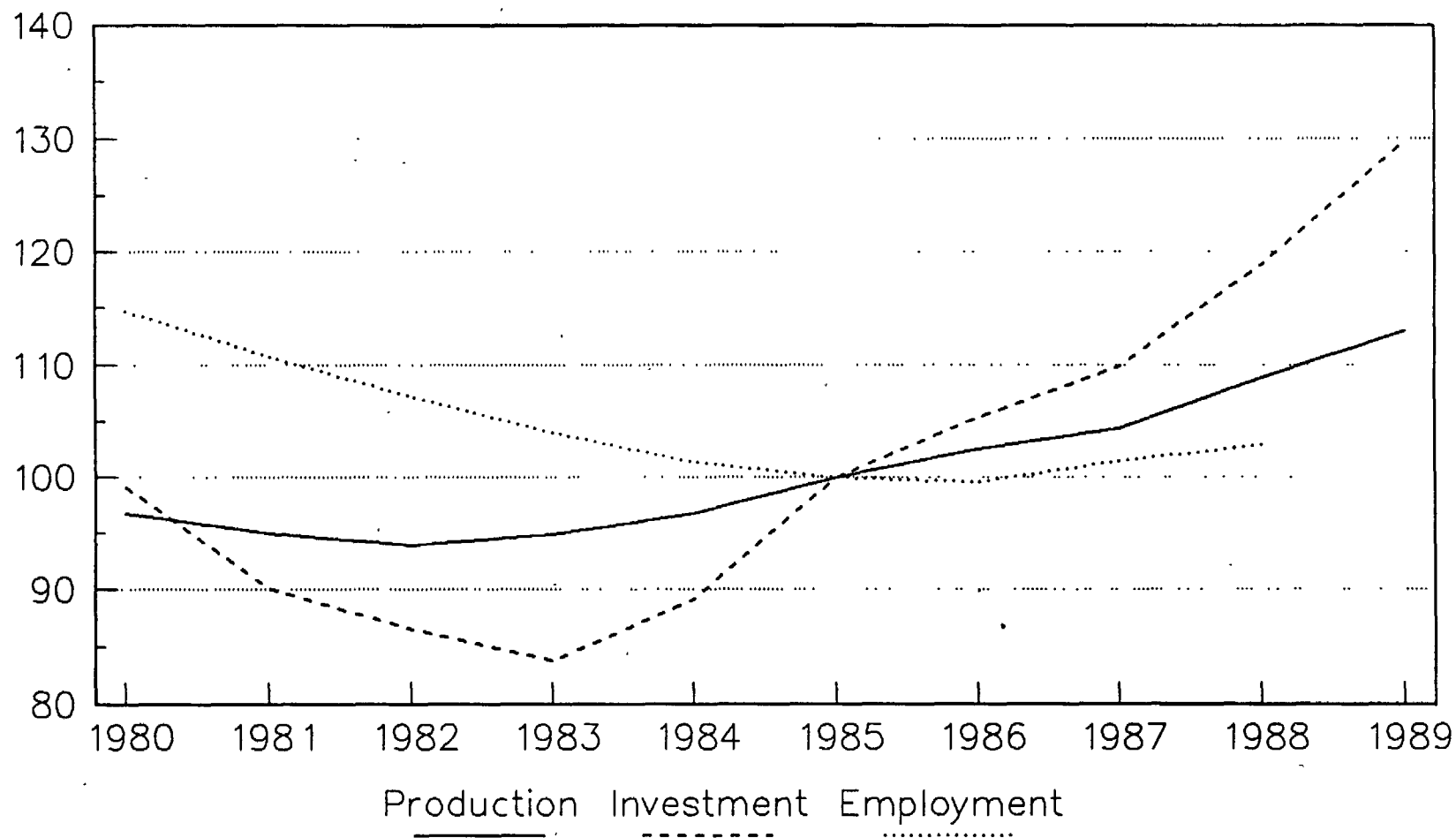
Source: European Economy and Economic Budgets

* Index: 1961-73 = 100

* Share of employment in total population

DEVELOPMENT OF PRODUCTION, INVESTMENT & EMPLOYMENT IN INDUSTRY

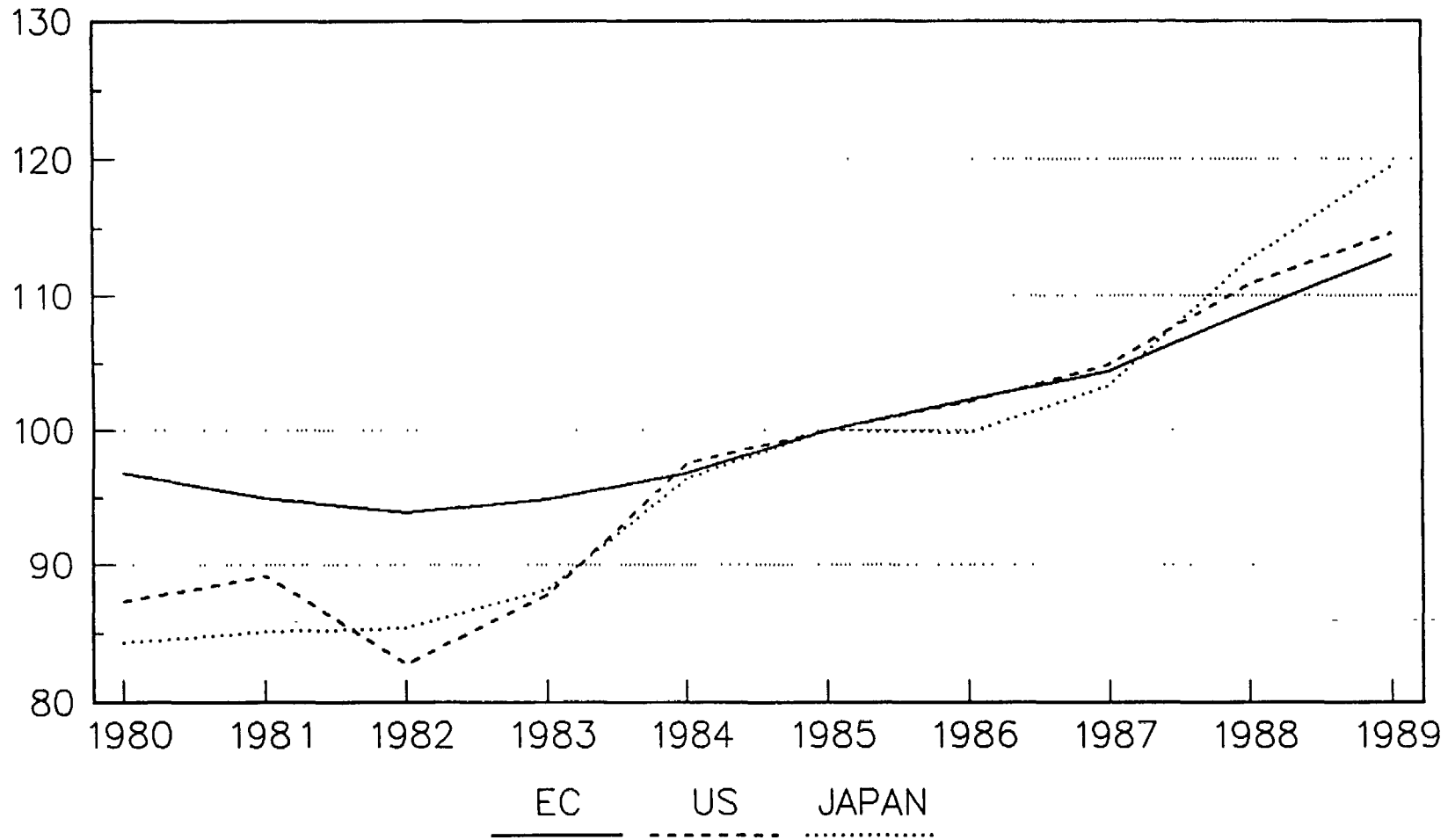
EUR 12 1985 = 100



Sources: EUROSTAT & Survey on EC investments

DEVELOPMENT OF INDUSTRIAL PRODUCTION EC, US & JAPAN

1985 = 100



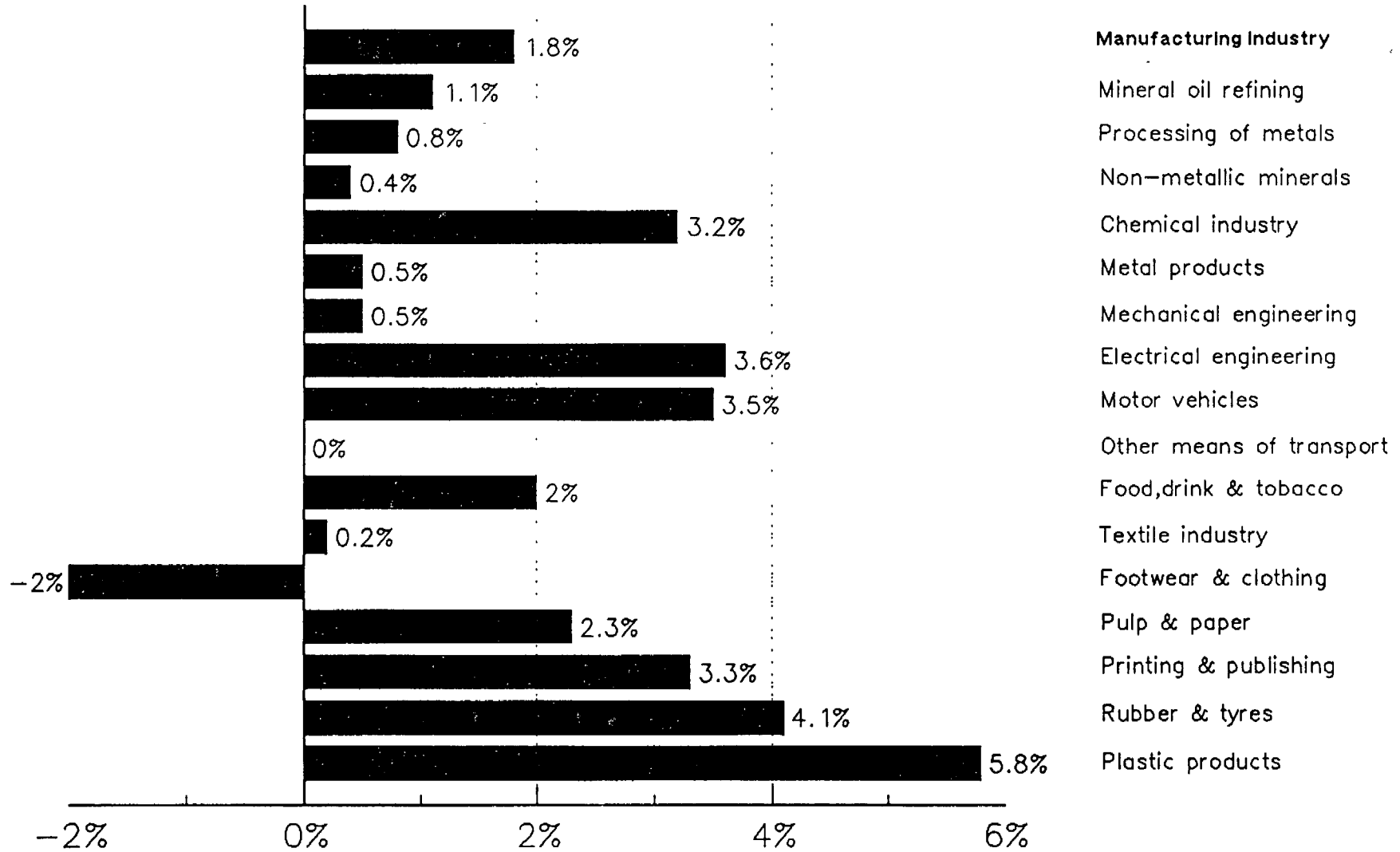
Source: EUROSTAT Industrial Trends

Fig. 10

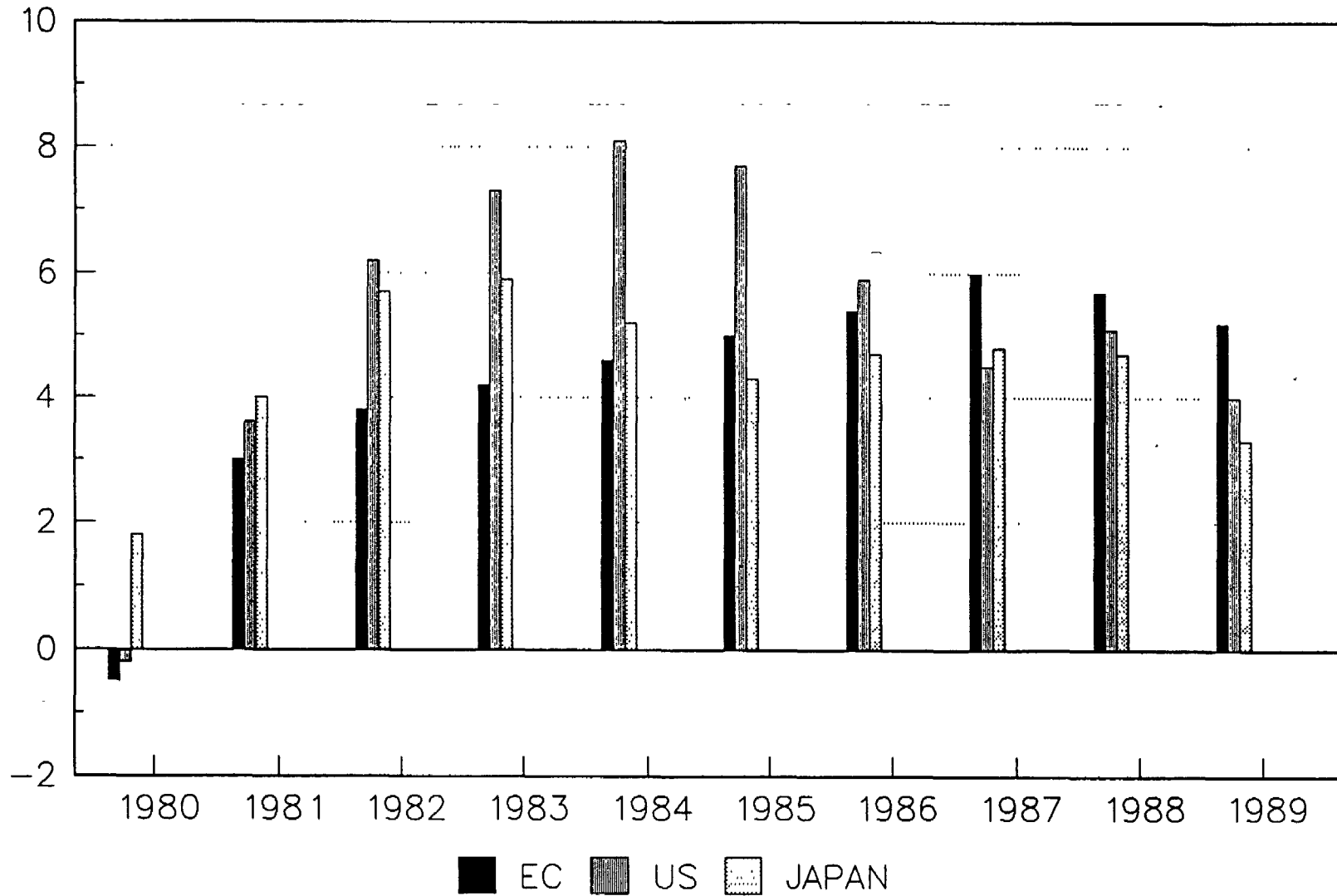
44

INDUSTRIAL PRODUCTION

Annual average percentage change 1980-1989



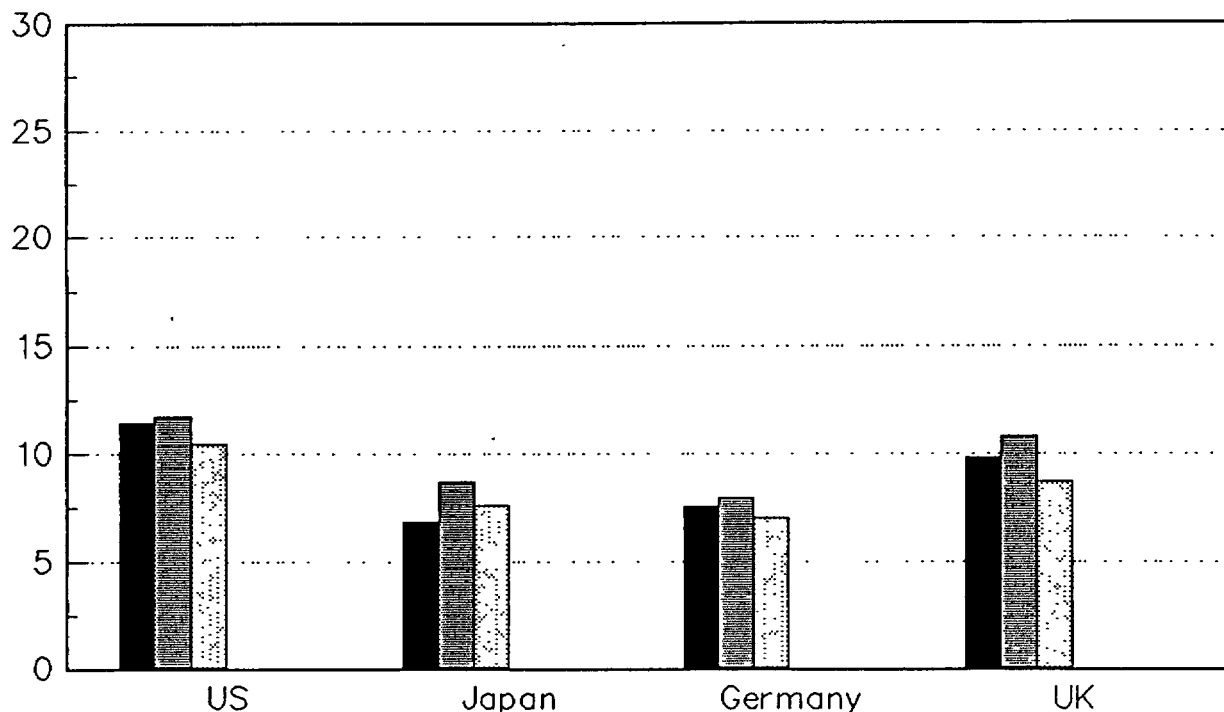
DEVELOPMENT OF REAL INTEREST RATES % 1980-1989



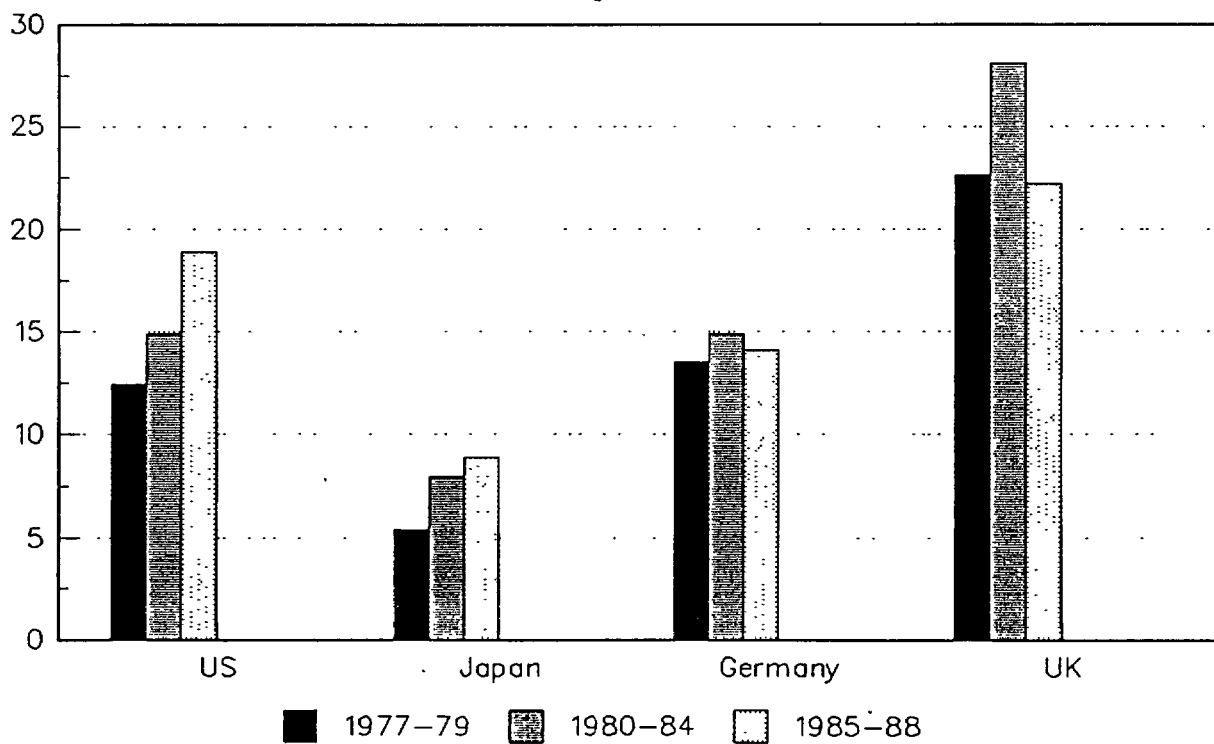
European Economy No 42

Fig. 12

Cost of Capital for Equipment and Machinery



Cost of Capital for Research & Development Projects



Source. Federal Reserve Bank of New York

DEVELOPMENT OF INDUSTRIAL PRODUCTION 1985 = 100

Sector	1980	1989	Annual % Increase
Mining & quarrying	96.9	84.1	-2.3%
<i>Manufacturing industry</i>	<i>98.3</i>	<i>115.5</i>	<i>1.8%</i>
Mineral oil refining	91	100.1	1.1%
Production of metals	101.5	108.7	0.8%
Iron and steel	102	123	2.1%
Non metallic minerals	113	117.3	0.4%
Construction materials	119	111.8	-0.7%
Glass Industry	95.3	114.2	2.0%
Ceramic goods	107.7	116.2	0.8%
Chemicals	86.4	114.6	3.2%
Metal products	110.8	116.4	0.5%
Foundries	113	117	0.4%
Boilermaking	108	114	0.6%
Hand Tools	107	99	-1.0%
Metal Packaging	95	99	0.5%
Mechanical engineering	106.5	115.2	0.9%
Machine tools	120	116	-0.4%
Cutting tools	104	101	-0.4%
Textile machinery	100	114	1.5%
Electrical engineering	87.3	119.6	3.6%
Domestic appliances	108.2	120	1.3%
Electric lighting	99.8	123.2	2.4%
Consumer electronics	122.1	138.5	1.6%
Motor vehicles	93.7	127.7	3.5%
Other means of transport	111.7	112	0.0%
Shipbuilding	128	67	-10.3%
Railway rolling stock	114	77	-5.5%
Aerospace	79	119	6.0%
Food, drink & tobacco	93	111.1	2.0%
Meat	84.2	118.3	3.9%
Dairy products	95.9	107.9	1.3%
Textiles	103.4	105.5	0.2%
Leather & leather goods	85	99	1.9%
Footwear & clothing	109.3	91	-2.0%
Timber & wooden furniture	121.3	119.3	-0.2%
Paper & paper products	94.7	122.9	2.9%
Printing	100	133.9	3.3%
Rubber & tyres	92.5	122.9	3.2%
Plastic products	92	129	5.8%
Other manufacturing industries			
Musical instruments	104	106	0.2%
Toys	120	106	-1.4%
Total Industry	96.8	113	1.7%

Source: EUROSTAT and Panorama of EC industry

**COMPETITIVE SITUATION OF EC INDUSTRY BY SECTOR
1988**

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Sector	Sector Code	Exports (% production)	Imports	Ratio X/M
<i>Very favourable situation: Group A</i>				
Furs	456	64.2	56.4	1.1
Textile machinery	323	50.5	26	1.9
Paper machinery	327	34.8	20.3	1.7
Medical equipment	372	32.3	30	1.1
Food, chemical machinery	324	31.4	12.4	2.5
Steel tubes	222	30.7	11.9	2.6
Alcohol & spirits	424	16.5	1.5	11.0
Non-metallic mineral products	245	15.7	4.3	3.7
Rolling stock	362	12.8	3	4.3
<i>Favourable situation: Group B</i>				
Precision instruments	371	28.8	22.9	1.3
Machine tools	322	26.4	15.5	1.7
Transmission equipment	326	24.5	15.4	1.6
Abrasives	246	23.3	13.3	1.8
Mining machinery	325	23.2	11.5	2.0
Shipbuilding	361	20.5	12.3	1.7
Ceramic goods	248	20	6.9	2.9
Agricultural machinery	321	18	7.7	2.3
Steel rolling	223	16.9	8.2	2.1
Electric lighting	347	16.5	10.8	1.5
Motor vehicles	351	15.6	9.4	1.7
Power transformers	342	15.5	10.8	1.4
Pharmaceuticals	257	15.3	7	2.2
Industrial electrical apparatus	343	15.4	14.6	1.1
Other chemical products	256	14.4	9	1.6
Household appliances	346	13.2	11	1.2
Motor parts	353	13.1	5.3	2.5
Iron & steel	221	12.8	6.6	1.9
Glass	247	12.3	7.1	1.7
Tools	316	11.8	7.7	1.5
Plastics processing	483	11.1	7.5	1.5
Furniture	467	10.6	6	1.8
Soaps & detergents	258	9.2	1.7	5.4
Structural metal products	314	9	2.5	3.6
Wine	425	8.4	0.1	84.0
Paint	255	6.7	1.9	3.5
Trailers & caravans	352	6.1	1.4	4.4
Dairy products	413	6	1.3	4.6
Boilermaking	315	5.4	1	5.4
Clay products	241	4.1	0.2	20.5
Brewing	427	3.5	0.2	17.5
Pasta	417	2.9	0.3	9.7
Bread & flour	419	2.6	0.8	3.3
Soft drinks	428	2.1	0.4	5.3
Concrete	243	1.5	0.2	7.5

Positive Balance: Group C

Asbestos	244	9.6	3.3	2.9
Paper & board	472	7.1	6	1.2
Metals transformation	313	6.3	4.5	1.4
Printing	473	6.1	2.6	2.3
Confectionery	421	6	2.6	2.3
Grain milling	416	5.5	2.4	2.3
Foundries	311	5.2	2.5	2.1
Retreading rubber tyres	482	5.1	2	2.6
Insulated wires & cables	341	4.1	3	1.4
Forging	312	3.5	1.5	2.3
Animal feedingstuffs	422	2.8	2.2	1.3
Cement	242	2.5	0.9	2.8
Wooden containers	464	2.2	0.8	2.8
Tobacco products	429	1.7	0.8	2.1

Balance: X/M=1

Aerospace	364	25.8	25.2	1.0
Man-made fibres	260	25.4	24.6	1.0
Cork & brushes	466	19.9	20.2	1.0
Textiles industry	430	16.4	17.1	1.0
Photographic laboratories	493	5	4.8	1.0

Negative Balance: Group D

Fish processing	415	9.4	25.1	0.4
Building materials	231	8.1	9.7	0.8
Oils & fats	411	6.4	18.9	0.3
Semi-finished wood products	462	5.6	22.3	0.3
Meat processing	412	5.2	6.4	0.8
Carpentry	463	4.1	7.4	0.6

Unfavourable situation: Group E

Musical instruments	492	28.6	50.5	0.6
Toys	494	25.7	47.4	0.5
Non-ferrous metals	224	21.6	45.7	0.5
Other household chemicals	259	20.5	25.6	0.8
Office machines	330	20.5	37.4	0.5
Footwear	451	20.2	68.1	0.3
Leather tanning	441	19.9	22.6	0.9
Consumer electronics	345	19.9	38.7	0.5
Knitting industry	436	19.5	26.2	0.7
Carpets	438	18.9	20.8	0.9
Motorcycles	363	14.2	29	0.5
Clothing	453	13.1	23.6	0.6
Other wood manufactures	465	11.7	16.3	0.7
Fruit & vegetables processing	414	10.2	19.3	0.5
Pulp, paper & board	471	8.4	36.7	0.2
Wood sawing	461	5.3	54	0.1
Starch	418	3	12.3	0.2
Potassium & phosphates	232	0	13.7	0.0

Very unfavourable situation: Group F

Jewellery	491	205.7	915.5	0.2
Optical instruments	373	52.8	61.8	0.9
Clocks & watches	374	52.2	71.3	0.7
Leather products	442	40.9	43.3	0.9
Rubber products	481	13.4	59.4	0.2

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