ARGUMENTA OECONOMICA

3 • 1996

Wrocław University of Economics
Wrocław 1996

TABLES OF CONTENTS

INAUGURAL LECTURE
FOR OPENING THE ACADEMIC YEAR 1996/1997

I. ARTICLES

II. REVIEWS AND NOTES

ARGUMENTA OECONOMICA
No 3 · 1996
PL ISSN 1233-5835

I. ARTICLES

*Anna Zielińska-Głębocka**

UNEMPLOYMENT IN THE EUROPEAN COMMUNITY IN THE LIGHT OF STRUCTURAL CHANGES

European unemployment is mainly of a structural nature, its cyclical component is very small. As a result employment growth is affected by structural change related to sectoral shifts, technological progress and international competitiveness. European weaknesses in the sphere of generic technologies and of competitive advantages in the world markets contribute to high rates of unemployment in the EU. The Community has undertaken certain policies to promote structural change and combat unemployment. The Commission White Paper on *Growth, Competitiveness, Employment* is of particular importance in this respect. The 1996 European Council meeting in Florence brought a consensus about a common employment strategy which is likely to reinforce the job-creation process in the EU.

1. INTRODUCTION

At the end of the 20th century the European Union (EU) is facing serious economic and social problems which should be overcome if the Union is to accomplish its "2000 Agenda" on further integration processes. Basic economic and social difficulties are of a structural nature and this calls for a complex structural strategy at community and national levels. The following problems are generally recognized as EU structural weaknesses:

– slow economic growth (in spite of the strong present world recovery, EU economic growth lost its dynamism in 1995 and 1996),

– the low employment intensity of growth interrelated with high unemployment rates,

– the low rate of structural change,

– declining competitiveness on international markets.

All the above problems are interrelated and should be analyzed jointly. The high rate of unemployment has a particular importance in this respect. It is the result of an unfortunate combination of the other weaknesses (slow economic growth, low rate of structural change and weak competitiveness). In 1995 the EU unemployment rate amounted to 10.8% and was only 0.4% lower than in 1994. In a number of EU countries there were no signs of employment

* Centre for European Studies, University of Gdańsk.

recovery and unemployment rates did not decrease as a result. The average level of unemployment in the EU is almost twice that of the USA and three times higher than in Japan.

Table 1
Rate of unemployment in the EU, USA and Japan
1993-95

Year	EUR-15	USA	Japan
1993	10.8	6.8	2.5
1994	11.2	6.1	2.9
1995	10.8	5.6	3.1

Source: EUROSTAT.

European unemployment is mainly not of the demand-deficient but of the structural nature. This means that the cyclical component of unemployment is relatively small and the structural element relatively large. The size of structural unemployment is assessed by the proportion of long term unemployed as a rough indicator and also by the shifts in the NAIRU (Non-Accelerating-Inflation Rate of Unemployment) or NAWRU (Non-Accelerating-Wage Rate of Unemployment). The NAIRU is defined as the rate of unemployment at which inflation tends neither to increase nor to decrease, and the NAWRU is the rate of unemployment needed to stabilize wage inflation. In the EU the present proportion of long term unemployment is about 5.5% while the estimated NAIRU (NAWRU) is above 6%. A number of economic studies confirm that the rise in structural unemployment has been the dominant cause for increases in total unemployment in recent years. This trend is reflected in the high share of certain groups of labour in total unemployment, in particular low-skilled and inexperienced workers and long-term unemployed. Structural unemployment is implied by many causes including the labour market rigidities and imperfections or a low pace of structural reallocations among different economic sectors and fields of activity referred to here as structural change.

In the world economy the process of structural change has accelerated over the past decades, mainly due to dynamic technological progress and increased international competition. This has challenged the European Community (EC) as regards structural adjustment to changing circumstances. The pace of adjustment has been relatively slower than what was required to improve the overall competitiveness of the EC in relation to the USA, Japan and the Dynamic Asian Economies (DAEs). The Community has faced significant structural impediments that contributed to a high level of unemployment and a poor export performance in high technology goods. The rate of unem-

ployment has been rising since the beginning of the 1970s. This upward trend was caused by a number of factors, including impediments to optimal allocation of resources and structural rigidities in the labour market. The European governments and institutions have reacted to structural challenges by various policy actions. The Internal Market Programme and the 1993 Commission White Paper on *Growth, Competitiveness, Employment* are the most important Community initiatives in this respect.

The present economic recovery in a favourable international environment creates optimistic prospects for economic growth. Economic growth and rising productivity should lead to a reduction in unemployment, particularly in its cyclical component linked to movements over the business cycle. Since the cyclical share of unemployment is very small (according to Commission calculations not larger than 2% of the active population in 1994), pure counter-cyclical actions will not solve the problem. In order to curb non-cyclical components (classical, structural, technological) and achieve a high rate of employment growth in the medium and long-term, the EU economies have to accelerate structural changes and remove labour market rigidities. A prosperous international environment is conducive to structural reforms "aiming at increasing the employability of some categories of workers and making growth more employment creating" (European Commission 1995).

The focus of this paper is structural change that may facilitate the job-creation capacity through the re-allocation of resources across sectors and industries. On the basis of the 1992 OECD growth decomposition study, this type of structural change is called the compositional change, that is the change in output and employment shares accounted for by different industries. The optimal resource allocation is an important source of employment generation. However, the stronger the macro-economic environment the more positive effects of structural shifts on employment growth. This constitutes the rationale for the acceleration of structural adjustments in the present world recovery.

Three issues are dealt with in the paper. Firstly, the extent of structural change that might affect employment in the EU. Secondly, the main sources of compositional structural change that are associated with employment growth. Thirdly, impediments and remedies to structural changes in the EU in the face of the increasing globalization of competition.

2. THE EXTENT OF STRUCTURAL CHANGE

In the last decades European countries have experienced a significant shift in real output and employment among sectors and industries. The shift in employment out of agriculture into services and certain manufacturing

industries was associated with the development path towards post-industrial information-based societies. The well known economic theory shows that the re-allocation of labour among three sectors, agriculture, industry and services affects the employment content of economic growth in a direct way. The permanent replacement of agricultural and industrial labour by other factors of production causes employment shifts from these sectors to services. In the process of sustainable economic growth the service sector plays the role of the labour-absorbing sector. However, the intensity of labour absorption differs in individual service industries depending on their reaction to income and technological change.

The employment generation effects of intra-industry reallocations are much more indirect. Manufacturing as a whole is characterized by higher productivity levels than services, but the rate of productivity growth varies across individual industries. The main problem, when considering the modernization of the manufacturing sector, is how productivity developments are translated into job-creation potential. The bulk of developments in the industry sector are linked to technological change in a traditional Schumpeter perspective. The change in technology affects also a large extent of reallocations within the service sector. This holds particularly for services to businesses whose development is directly associated with industrial activity.

In recent economic literature there is a growing concern about the importance of structural change for employment growth. The latest OECD studies (OECD *Document*... 1992; Sakurai 1995 and Soete 1995) focus on the extent and determinants of sectoral shifts in employment in the OECD countries. The findings point to the increasing role of structural change for employment growth in a number of OECD countries. The changes in the industrial composition of production affect countries' capacities to generate new job opportunities. The intensity of structural change has accelerated in the whole world economy, including the Dynamic Asian Economies. International competition has become more fierce as a result. All these developments call for more efficient structural policies better adjusted to the increased international implications of structural change.

European countries have witnessed employment gains and employment losses as an outcome of increased structural change. Most of the employment gains were in the high-growth sectors which included a number of services and manufacturing industries, such as financial services, community and social services, trade and hotel services, computer and office machinery, communication and semiconductor industry, aerospace and electrical machinery groups. These gains have been offset by employment losses in low-growth sectors, particularly in manufacturing low-technology and several medium--technology industries, including ferrous metals, shipbuilding, non-electrical

machinery, petroleum refining, textiles and footwear. The employment losses have been greater than the output share losses due to the relatively high labour productivity growth in manufacturing compared to other sectors. The OECD study of 1992 shows that the employment share of a number of high--technology manufacturing industries has remained stable or has fallen moderately, in spite of high output growth rate. Productivity growth was a predominant factor behind this trend. In EU countries a rapid productivity growth in certain high- and medium-technology industries which resulted in a decline in employment growth was caused by their attempts to become more competitive in the world economy.

At the same time productivity growth in finance and other business services has increased significantly which may cause future employment reductions therein. Soete (1995) writes that these services are becoming new tradeable sectors where productivity growth varies between the USA, Japan and the EC. The extent of employment gains and losses will finally result from the competitive positions of national sectors in the world markets.

EC countries have experienced a type of "jobless growth" for a long time. This is manifested in a very low rate of employment growth and a high rate of unemployment compared to the USA, Japan and the DAEs. The ratio of output growth to productivity growth has been in the EC lower than in the competitors' economies. In consequence, the rate of structural unemployment has increased to become a substantial share of total unemployment.

The employment pattern has been affected by sectoral shifts among the primary, secondary and tertiary sectors. Table 2 shows the annual growth rates

Table 2

Civilian employment by sector (average annual growth rates in percentages)

Country	Agriculture		Industry		Services	
	1983-91	1993	1983-91	1993	1983	1993
France	−4.1	−4.2	−1.1	−4.0	1.9	0.2
Germany	−3.5	−6.0	0.7	−2.9	2.0	−0.5
Italy	−4.0	−4.1*	−0.8	−0.9*	2.4	0.0*
Netherlands	2.2	−10.9*	2.1	−1.7*	3.9	4.3*
Portugal	−1.7	−1.6	1.3	−2.7	4.0	−1.7
Spain	−5.2	−4.4	1.5	−9.3	3.8	−1.5
UK	−1.4	0.0	−1.2	−5.0	2.5	−1.0
OECD Europe	−2.4	−4.8*	0.1	−3.2*	2.4	1.0*
United States	−0.5	−3.6	0.6	−0.9	2.5	2.4
Japan	−2.7	−4.4	1.2	−0.7	2.0	1.3
Total OECD	−2.1	−3.9*	1.2	−0.7	2.0	1.0*

* 1992.

Source: OECD (1994).

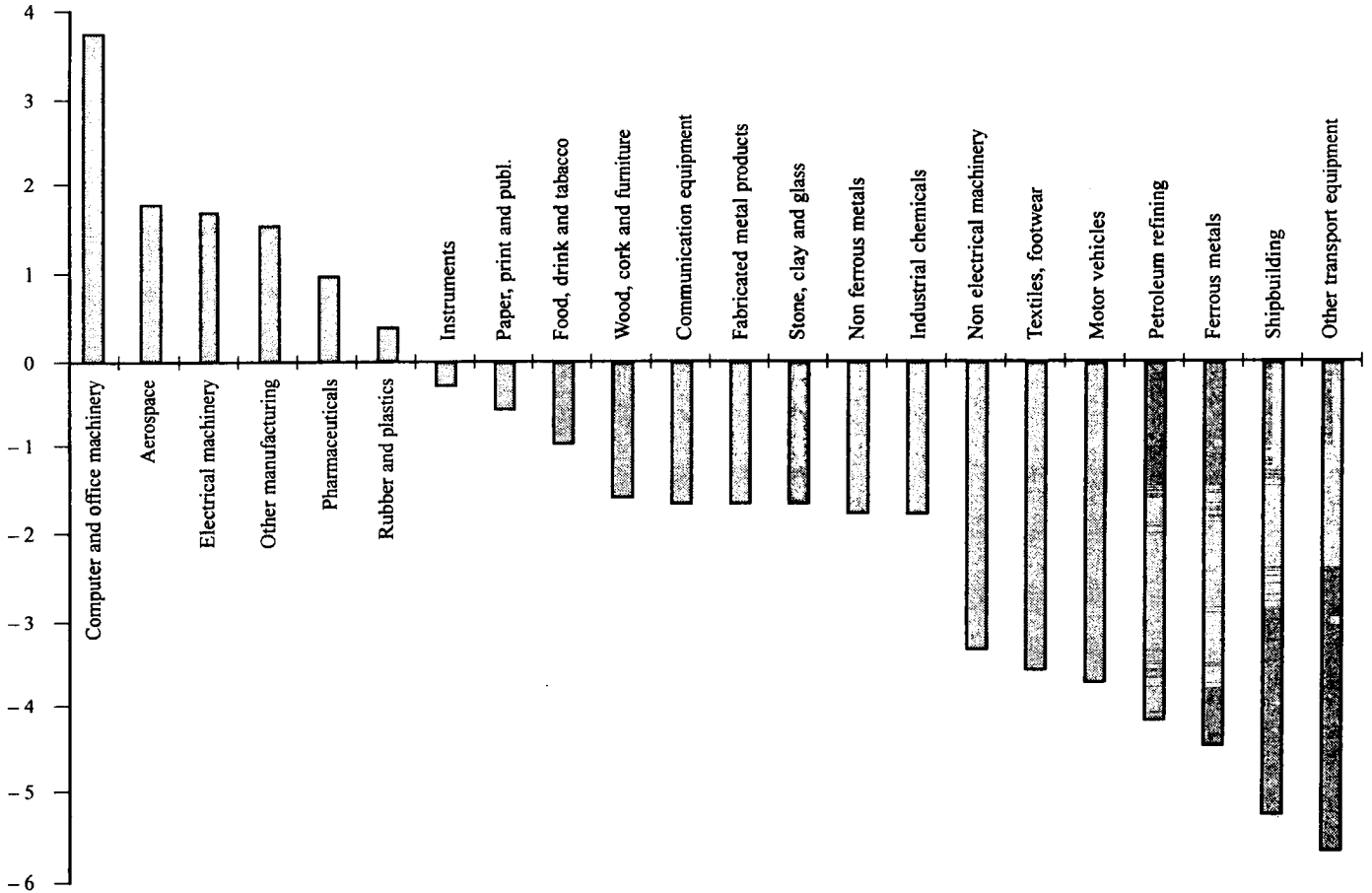

Fig. 1. Average annual employment growth 1980-90 in the EC
Source: OECD (1995).

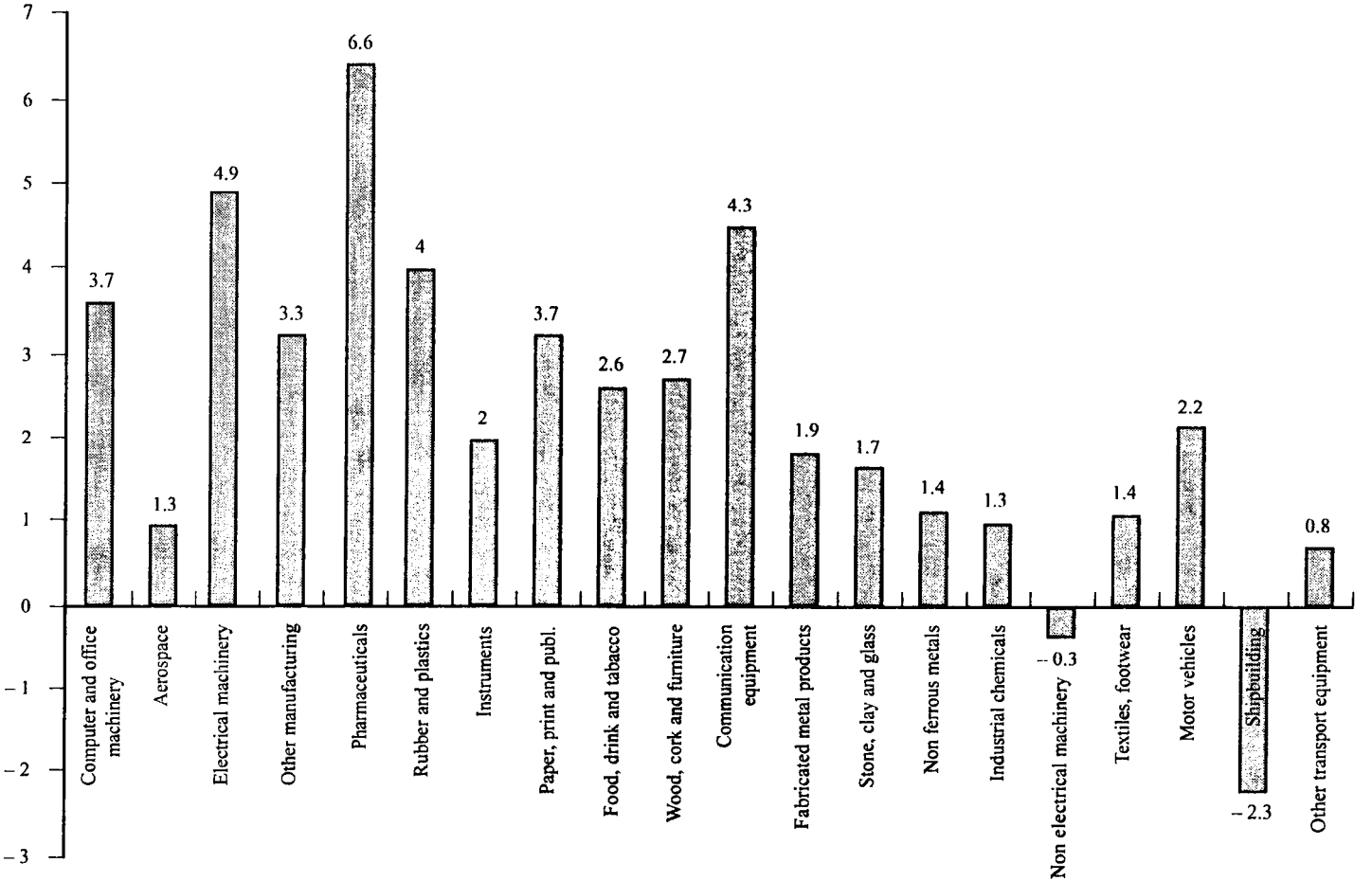

Fig. 2. Annual average rates 1985-93 (%) of production in industry
Source: *Panorama...* (1994).

in civilian employment by sector in the EU, the USA and Japan. All the European countries exhibit a continuous fall in agricultural employment and a steady rise in service employment. The service sector accounts for about 60% of total employment, whereas the share of industry is about 30-35%. In recent years Europe has experienced a significant decline in the manufacturing employment growth. The share of industry employment in total employment decreased by 4-5 percentage points.

Technology and demand are well known sources of inter-sectoral shifts of labour. Interactions between technology and demand cause continuous efficiency improvements in agriculture and industry and a steady increase in demand for services and advanced goods which satisfy more sophisticated consumer and producer needs.

There is a strong correlation between growing per capita income and changing consumer preferences. In industrialized countries a Linder-type representative demand (Linder 1961) leads to increased demand for product variety. This results in a higher degree of product differentiation and a bigger amount of combined product-service purchases. A country's capacity to offer product variety is directly linked to innovative and technological progress. The stronger process and product innovations – the higher spillovers to produce and sell more advanced, more differentiated goods and services.

Domestic markets constitute a testing ground for a number of new products which become future exports to other industrialized countries. As a result, changing consumer preferences are transmitted to demand developments in international markets.

Structural changes are also occurring at a disaggregated level among particular industries. These changes are induced by technological progress and changing demand preferences. Figure 1 shows the rates of annual employment growth in the EU by industrial sector. The industries with the highest employment growth are high-technology sectors whereas sectors with employment losses are low-technology traditional products. Figure 2 shows indices of production growth in the EC industries.

It is clear from the figures that the average production growth rates are higher than the rates of employment growth in all industrial sectors. In spite of a similarity in the directions of change in production and employment, production losses are generally much lower than losses in employment. Industrial sectors with the highest production growth are high-technology (computer and office machinery, electrical machinery, pharmaceutical, communication equipment) and medium-technology industries (rubber and plastics). Higher rates are also recorded in the paper, printing and publishing industries, wood industry and food, drink and tobacco. The lowest output growth is typical of shipbuilding, other transport equipment, metal sectors

and non-electrical machinery. The figures demonstrate that mature industries show lower levels of growth than more advanced sectors. However, employment growth in these sectors was much more adversely affected than production growth. This resulted in a decline in total industrial employment and a rise in unemployment.

3. MAIN SOURCES OF STRUCTURAL CHANGE AND EMPLOYMENT

There are a number of factors which cause compositional structural change in the European Community. Economic literature distinguishes four predominant causes: growth in domestic demand, technological progress, trade performance and productivity growth. Following the OECD growth decomposition study of 1992, Sakurai (1995) attempted to break down the main sources of employment growth for a number of OECD countries. The results are presented in the recent work by Soete (1995). The findings suggest that the sources of employment growth vary among different industries and across countries. In the service sector employment growth was associated mainly with rapid output and demand growth while in manufacturing industries the sources of employment growth were much more differentiated and concerned domestic demand, export expansion, technology and productivity changes.

Two factors seem to play an important role both in high-growth (manufacturing and service) and low-growth sectors in the EU: technological progress and international trade.

Technology and structural change

The role of technological progress in structural change can be derived from the Schumpeterian approach to economic development. Schumpeter assumed the discontinuities in the process of technical change lead to the rapid rise of new industries and technologies and the decline and possible disappearance of old ones. Major innovations are unevenly distributed over time and space which affects the re-allocation of resources among various spheres of economic activity in line with the path of technological progress. The pace and scope of resource re-allocation affect the path of economic growth and employment. Technological discontinuities also give rise to the catch-up problem among individual industries and countries. Linked to the diffusion of innovations the catching-up process contributes to the structure of international competitiveness. The most technologically advanced countries tend to profit from

international competition much more than countries that are lagging behind. Technological change plays an important role in both expanding and declining sectors. Expanding sectors make intensive use of the technology input, whereas technology intensity in low-growth sectors is much more constrained.

The modern innovation theories combine the Schumpeter concept with new ideas of technological systems or paradigm (Dosi 1982; Freeman, Clark, Soete 1982; Scherer 1986). Their ground is linked to the definition of "generic" or "core" technologies that affect productive processes in a number of industries. Core technologies are based on basic innovations that give rise to the "swarming" of complementary innovations. A bunch of radical (core) and complementary technologies becomes applicable in a great number of sectors and productive processes. They are likely to change production systems regardless of the type of economic industry. Information technologies, biotechnology and telecommunication are examples of the core technologies that influence the economy at all stages.

The generic technologies of the present technological system are an important input to a great number of economic activities. Microelectronics is becoming the core of information and communication technologies while molecular biotechnology constitutes the crucial component of modern bio-industries. The relationship between generic technologies and structural change concerns mainly the spread of technology over the whole economy. The pace of technology diffusion and the conditions of its optimal exploitation in a number of industries and services affect technology-related structural changes. Productivity growth, new job opportunities and gains in the quality of work are the main results of the development and application of generic technologies. The widespread use of these technologies leads to the acceleration of resource reallocation among various activities. As a result, there is an emergence of new industries, new types of private entrepreneurship, new forms of private services and new professions. The old traditional activities are in decline which may cause social resistance to change among the groups adversely affected.

The diffusion of generic technologies has a Community-wide aspect if a condition of full exploitation of new opportunities is to be fulfilled. Competition and cooperation on a European scale constitute the main mechanisms of this diffusion. The EU programme to support the transmission of core technologies within the Community is also of crucial importance in this respect. The Commission White Paper promotes an idea of "a common information area" based on free access to and mobilization of information on the internal market and within the Member States' societies. The Green Paper on innovation 1995 introduces a number of actions focused on reinforcing the technological progress in the field of generic technologies.

Information and Communication Technologies (ICT) play a predominant role in efficiency improvements within the whole economy. They are responsible for job generation in a number of high-growth sectors. The leading European technology intensive manufacturing industries include the aerospace, chemicals, pharmaceuticals, electrical equipment, electronics, data processing and office equipment, motor vehicles and scientific instruments. These leading sectors account for a total of 6.6 million jobs or about 31% of total manufacturing employment. Four of the eight sectors: chemicals, pharmaceuticals, electrical machinery and motor vehicles represent European strength in terms of international competitiveness, while the remainder are the symbols of European structural weaknesses in the world economy. The above sectors differ as regards employment growth and performance. The chemicals industry, the electrical equipment and motor vehicles industry belong to the major industrial employers in the EU which have witnessed significant employment reductions in recent years. Employment trends have been much more prosperous in pharmaceuticals, aerospace and scientific instruments where the employment level has improved or remained stable even at a time of recession. The EU data processing and office equipment sectors employ about 250,000 people and due to their structural weaknesses have little spill-over effect on total employment growth.

Technology is also an important source of service sector growth. The impact of technology on services is taking place through *the income effect* and the *diffusion effect.*

The transmission of technological change to service growth via *income effect* refers to the shifts of output and employment among agriculture, manufacturing and services, and within industry and services through re-allocations from traditional products to new ones. The scale of these shifts depends on the sectoral income elasticities of demand as a function of the per capita income level, as well as on the sector's growth rate of per capita supply of output equal to its productivity growth (Cornwall & Cornwall 1994). Sectoral income and productivity growth rates determine the expansion of the service sector in a particular country. The once-over change in the level of per capita income may cause a strong income effect leading to significant labour movements into services. This can be applied to the Cecchini predictions of the 1992 dynamic effects of the completion of the internal market. The Cecchini Report (1988) estimated an income growth of between 2.5% and 6.5% in reaction to the removal of barriers to the free transfer of goods, services and capital. The recent experience of the European economies has proved that the once-over effect was very moderate, and what can be expected is the smooth long-run impact of the functioning of the internal market. The service sector is not homogenous in terms of productivity growth rates. Part of the differences

can be explained by the nature of production processes, and this is the case of non-market services which show lower productivity growth indices than market services as a whole. In the years 1986-90 the productivity growth rates in five EU countries (Belgium, West Germany, France, Italy and Netherlands) accounted for 1.6% in market services and 0.4% in the non-market sector (COM/96/86 1996). Some differences in productivity levels are caused by the scale of technology accumulation. There is a bulk of service industries that are technology-intensive and have large productivity increases. Higher productivity growth may hamper the absorption of labour by these sectors if productivity gains are not transmitted to decreases in relative prices and increases in the job-creation capacity. Financial and banking services belong to sectors with a big potential for productivity and employment growth. Whether they create jobs depends on how productivity gains are translated into economic values.

Services are also affected by technological change via *the diffusion effect.* This concerns mainly the effects of generic technologies on various areas of economic life. The diffusion of core technologies may have a general effect on the emergence and development of several service activities. Professional services, audiovisual industries, telecommunication services, training and retraining activities and health services are examples of sectors whose expansion is stimulated by the spread of information and communication technologies or biotechnologies. They offer new job-creation capacity as a by-product of technological progress. The more advanced innovation process the stronger spreading effects on the whole economy. The diffusion effect may be also linked to *the extended product cycle* which covers not only production of goods but also rendering of related services. This holds mainly for the product-specific services or services to enterprises. Computer-aided design, data processing, professional services, audiovisual services, equipment repair and maintenance belong to this group. Hirsch, Kalish and Katznelson (1988) link the development of these industries to the nature of proprietary knowledge which offers producers a certain degree of market power. They distinguish industries that are alone able to accumulate all the necessary knowledge from industries which absorb only a part of innovation whereas the rest has to be embodied in related services. The spread of the life cycle on services is becoming a source of new employment capacities. It offers new job prospects in a number of firms, particularly small ones, servicing the production processes.

The development of technology-related services raises the problem of *deregulation and liberalization* on a Community scale. Deregulation is needed to promote market services growth on the internal market through market forces and competition. The creation of a common market for services facilitates exposing services to free competition. The role of liberalization is to remove the existing barriers which hamper the europeanization of service

markets within the Community. Liberalization of the transport and energy markets, telecommunications sector and the audiovisual sector, and the development of trans-European services are of crucial importance for the creation of the new service-information society. In order to liberalize heavily regulated services sectors the Community has taken necessary steps regarding telecommunications, energy, audiovisual services and postal services. Decisions in the field of telecommunications are essential for further technological progress. The Commission has adopted a Directive that provides for the full liberalization of telecommunications services by 1 January 1998 (European Commission 1995). This requires the Member States to terminate monopolies granted to national operators and open markets to competition. Liberalization will concern all the services rendered by the telecommunications sector, such as:

- the sale of equipment (telephones, modems, fax machines),
- voice telephone services to the general public,
- satellite services,
- mobile telephone and paging services,
- radio and television broadcasting services to the public.

International trade and employment

International trade plays an important role in both the expansion of high-growth and slow-down of low-growth industries. This impact is primarily felt in European manufacturing which is highly exposed to international competition. In spite of a growing extent of tradeability the service sector is traditionally less sensitive to trade performance. Employment growth in this sector is mainly affected by domestic demand and technology improvements. Trade performance in manufacturing products determines the EU competitiveness vis-a-vis its main competitors. In the world economy the expansion of high-technology manufacturing is driven primarily by exports. Export market gains induce output and employment growth and lead to improvements in macroeconomic competitiveness. In medium-technology and low-technology industries import penetration may contribute to losses in output and employment shares. The shift of comparative advantages from low-technology to more advanced sectors is likely to become an important source of economic growth and employment creation. On the contrary, the shift towards traditional sectors may have a major negative impact on growth and job-creation. The latter is the case in the Community's industry where specialization in low-technology have been reinforced and a comparative advantage in high-technology sectors weakened in the last years. Table 3 shows

indices of international specialization in high, medium and low-technology industries in the EU, Japan and the USA.

Table 3

International specialization in high-technology, medium-technology and low-technology industries in 1970 and 1992

	EU		Japan		USA	
	1970	1992	1970	1992	1970	1992
High-technology	86	82	124	144	159	151
Medium-technology	103	100	78	114	110	90
Low-technology	103	113	114	46	64	74

Source: OECD (1994).

The commodity pattern of European trade is not satisfactory compared to that of the USA and Japan. The Community is still showing a stronger intensity to export low-technology and medium-technology goods than strong-demand technologically advanced products. The developments of the EU export specialization are reflected in the revealed comparative advantages (RCA) shown in Figure 3. The data of RCA for the USA, Japan and the EC (the so-called TRIAD of the most advanced regions) have been calculated by the OECD services for 1970 and 1990. The indicators for high-technology

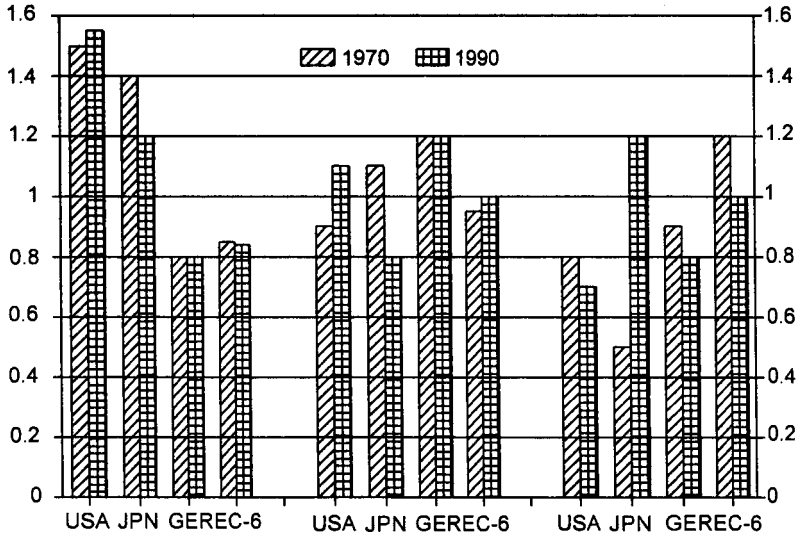

Fig. 3. Revealed Comparative Advantages 1970 and 1990
Source: Englander and Gurney (1994).

sectors as a whole show the relatively weak trade performance of Europe. The change between 1970 and 1990 has been negative in spite of successful developments in certain high-tech areas, such as pharmaceuticals, organic chemicals, machine tools, and scientific and precision equipment ("European Economy" 1993). Recent years have brought about a slight improvement in European technological competitiveness within the TRIAD, but it has not crucially changed the pattern of competitive positions. According to the Eurostat data (*Panorama...* 1994) high-technology sectors displayed a low share in total TRIAD production: computers and office equipment registered a 23.4% share, instrument engineering 24.6% share, and consumer electronics only a 16.3% share in 1993.

Analysis of the pattern of competitive advantages can be combined with an examination of the intensity of exports and imports in particular industries. Table 4 shows the intensity of foreign trade in EU selected high and medium-technology sectors in the period 1986-92. The nine technologically advanced sectors with a relatively high growth rate in production have experienced a significant increase in exports. Two of these sectors, office and computer equipment and consumer electronics have witnessed, however, a much higher intensity of imports growth than intensity of exports. This resulted in an increased import penetration and losses in their competitive position in the world markets. In the case of pharmaceuticals, chemicals and certain electrical appliances, high export intensity was combined with a smaller intensity of imports. Trade performance in these sectors points to a relatively stronger competitive position of the Community.

Table 4

High-technology industries and intensity of foreign trade

Industries	Annual % growth in production (1986-92)	Intensity of exports	Intensity of imports
Pharmaceuticals	7.3	15.4	8.9
Medical and surgical equipment	6.2	31.5	33.7
Telecommunications equipment	5.4	15.7	14.4
Office and computer equipment	5.1	21.6	40.3
Electric lighting	4.6	17.5	12.7
Electrical engineering	4.6	17.5	12.7
Electrical engineering	4.0	17.7	19.4
Domestic electrical appliances	3.8	16.0	11.3
Chemicals and man-made fibres	3.5	16.9	13.0
Consumer electronics	3.2	22.4	40.1

Source: European Commission (1994).

Trade in ICT are decisive for the present pattern of competitive positions within the most advanced countries. The EU ICT sector lags behind the USA and Japan in terms of production and trade. Within the OECD production remains concentrated in the USA and Japan with the latter rapidly increasing its direct employment and output shares. In the trade area the USA and Japan are the main exporters whereas the EC has a relatively weak competitive position. The export/import ratio can be used for measuring international competitiveness in a particular industry. In 1992 in the office machinery and computer industry export/import ratio accounted for 0.37% in the Union, 4.24% in Japan and 0.76% in the USA. The EC ratio has decreased from 0.52% to 0.37% in the period 1986-92 indicating a loss of international competitiveness. The information technology sector has also a strong impact on the productivity of the user sectors, both manufacturing and services. The OECD analysis (1995) shows that the productivity of the computer sector has been the main contributor to manufacturing productivity gains in Germany, Japan and the USA.

EU competitiveness has two aspects: internal and external. Internal is related to regional disparities within the Community that lead to the differentiated competitive position of various Member States, as regards costs and prices, external equilibrium and the rate of employment growth. Convergence requirements cause the problem of *the internal catching-up* of less favoured countries and regions with the countries indicating stronger competitive position (and with the EU average).

The external aspect of EC competitiveness relates to its position against its main competitors, particularly within the TRIAD. This process is affected by *the external catch-up* of the region as a whole. In recent decades the EU position as a whole has worsened in terms of export market shares in high-technology and new products. The weaknesses of the European economies have been revealed in the process of global competition. Since the international environment is constantly changing, international trade is becoming a testing ground for industries and firms in respect of their potential to innovate and compete. Maddison (1991) found the strong positive correlation between productivity and export growth. Export-induced productivity growth may have multiplier effects on employment in the medium term through a rise in wages and profits and a fall in prices (OECD 1994). However, direct and indirect employment effects are not easy to measure. A lesson can be learnt from the experience of countries with better output and trade performance. They have registered higher employment growth and lower unemployment rates than the EU in recent decades.

The Community's poor trade performance in strong- demand sectors indicates its restricted ability to adjust to the changing conditions of world

demand. Having a worse performance in strong-demand industries, the Community is not able to make full use of the demand effects on productivity and employment growth even in periods of strong recovery with the "exports engine" behind it (for example in a present recovery in a favourable international environment). This constitutes a rationale for the acceleration of structural change and positive adjustment as provided for in the 1993 White Paper.

4. IMPEDIMENTS AND REMEDIES TO STRUCTURAL CHANGE

The lower potential of the generic technologies, particularly the Information Technologies and the weak competitive position in the high-technology strong demand sectors compared to the USA and Japan are the main symptoms of European structural weaknesses. Poor employment growth and a high rate of structural unemployment are indirect consequences of these weaknesses. Structural difficulties are related to the emergence of various impediments to compositional and institutional change within the Community. The directions of structural change seem to support low-growth traditional sectors rather than reinforce high-technology, high-growth industries. To a large extent this trend has been contributing to the jobless growth of the Community in the '80s and '90s. There are a large number of factors responsible for this unsatisfactory structural change. Rigidities on the European labour markets and the lobbying process for hindering the pace of structural change are examples of these factors.

The disfunctioning of the labour market, including training and education, is one of the main causes of a structural part of unemployment. The diagnosis has been made by the Commission in the White Paper on *Growth, Competitiveness, Employment.* The Commission classifies the basic weaknesses of the EU labour market:

- relatively low level of training,
- the failure of education,
- the lack of skills in a number of areas related to the application of new technologies: information technology, applications of biotechnology, combinations of technical and management skills,
- the lack of a genuine European market in skills and occupations,
- the lack of labour market flexibility in terms of the organization of working time, pay and mobility,
- inadequate match of labour supply to the needs of the market, especially as regards skills and qualifications,

– inefficient social protection schemes which tend to protect people already in work and obstruct the recruitment of job-seekers and new entrants,

– the high level of non-wage costs, particularly in the form of statutory levies and charges.

The above factors seem to slow down the pace of structural change and militate against jobs. The particular feature of the European labour market is a growing gap between educational qualifications and occupational jobs. The demand for new skills and qualifications related to technological change is not matched by the supply of educated and trained workers. At the same time there is a surplus of workers with low technical skills who represent a significant part of total unemployment (about 50 per cent in 1995).

Market rigidities are also the main cause of the relatively high labour costs in Europe. In recent years these costs have risen much faster than among the Community's main trading partners. High labour costs contribute to the worsening of the EU competitive position compared to both the rest of the OECD area and the Dynamic Asian Economies.

The 1993 White Paper emphasizes the need for a "thorough going reform of the labour market, with the introduction of greater flexibility in the organization of work and the distribution of working time, reduced labour costs, a higher level of skills, and pro-active labour policies". However, the Commission 1996 Annual Report raises some doubts about the possibility of achieving the White Paper goals without a solid medium-term growth strategy (COM/96/86 final 1996).

The impact of structural change on employment is revealed also by the strength of the rent-seeking of the interest groups that perceive benefits to themselves from resistance to change in industrial structures. The rent-seeking concept which has been introduced to economic literature by the new political economy of trade policy (Krueger 1974; Baldwin 1982) is becoming the subject of analysis in other areas linked to the functioning of the political market. Structural change constitutes a special area in this respect because it relies on flexibility in product and factor markets. It also demands more competition for profit-motivated innovation processes. Changes in industrial structures lead to the re-allocation of resources from lower-productivity to higher-productivity sectors and affect income distribution in favour of the former sectors. This gives rise to the emergence of two types of rent-seeking in the areas adversely affected: the first related to industry-specific interest groups and the second based on the Stolper-Samuelson theorem of income distribution. Mussa (1993) argues that the political power of special interest can be combined with *the fixed-number-of-jobs fallacy* which result in significant resistance to change and increased demand for public support in the form of domestic interventions or trade protection.

According to Baldwin (1984), Frey (1984) and others the bulk of rent-seeking activity in OECD countries is carried on by *the industry-specific interest groups* that press the governments for public spending and protection. In the European Community it is the low-technology or more traditional sectors, such as *agriculture, textiles, automobiles and steel industry* that receive higher protection and stronger regulation at national and Community levels. Protection and regulation create barriers to market openness and tend to slow down the pace of productivity growth. Industry-specific lobbying is often characterized by the concerted actions of workers and managers who feel threatened by structural change and international competition. They form common interest groups and oppose regulatory reforms. Interest group pressures lead to locking resources in sectors where their economic value is smaller and producing disincentives for future restructuring. This results in sacrificing persistent job-creation capacities for the short-term support of existing jobs.

The effects of the industry-specific rent-seeking process are reflected in the Community Commercial Policy and other economic policies conducted by the EU and Member States (industrial policy, CAP, labour market policies, etc.). Foreign protection and state aid to traditional industries are still stronger than the support given to strategic or infant industries in spite of significant reforms implemented recently in this respect . Similar trends have been found also for other OECD countries (Krugman 1993; Bhagwati 1994; and others). The entry into force of the provisions of the Uruguay Round and the implementation of the WTO trade disciplines and rights will tend to relax protectionist pressures in traditional industries.

The growing openness of the European markets provokes discussion about the validity of the Stolper–Samuelson theorem for traditional industries with a high content of low-skilled labour. In all OECD countries low-skilled labour is a relatively scarce factor of production which may run into conflicts about income distribution. The new trade theory suggests that the income distribution conflicts diminish in trade among similar countries which are characterized by a high degree of product differentiation, the presence of increasing returns and a large extent of intra-industry specialization. The problem is whether the new patterns of trade can reduce or even eliminate these conflicts in the Community. Empirical analysis by Martins (1994) gave evidence that in industries with low product differentiation, such as textiles and clothing, leather products, rubber and plastic, non-metallic mineral products or iron and steel, import penetration may lead to conflicts among low-skilled labour which feel threatened by income re-distribution. In industries where firms have a stronger market power these conflicts can be relaxed by higher margins sharing or by price increases while in more fragmented industries this

relaxation is less probable. The EU economy has a large proportion of traditional industries which produce homogenous goods and has a high level of wage sensitivity to import penetration. This holds particularly for footwear and clothing, non-metallic minerals, metal tools and wooden furniture where the EU recorded the highest share in TRIAD production. A structural weakness is a source of political pressures on saving jobs and decelerating structural change. The validity of the Stolper–Samuelson theorem for traditional industries is relatively high and leads to interest groupings and rent-seeking activities.

The EU iron and steel industry is an example of traditional sectors with a low level of product differentiation and a certain degree of market power, and with a large extent of social difficulties. With a high share in world steel production and extreme sensitivity to the fluctuations of the business cycle this industry is facing high overcapacity and strong pressure on employment reduction. The number of persons employed decreased from 402.000 in 1989 to 335.000 in 1993. The need for further lay-offs is increased by the present rise in productivity. The resulting social tensions constitute arguments for structural resistance and continued protection at the Community level.

Policies to promote structural change and related employment growth

The Commission White Paper on *Growth, Competitiveness, Employment* is an important initiative to build a medium-term strategy at Community and national levels in reaction to the acceleration of structural and technological change in the world economy. Drawn in large part from the contribution of the Member States, the White Paper introduces a number of proposals aimed at meeting the challenges of the changing societies. These proposals have to be included in the regulatory and policy measures of EU institutions and national governments. The Commission thus calls for adaptation of the document objectives in behaviour and policies at all levels: Community, national, and local. Since there are still strong disparities of the economic situation in Member States the bulk of solutions and actions should be formulated and implemented by particular countries. In this context, the White Paper defines the main priorities which will guide the actions of Community institutions. Making the most of the single market, creating trans-European networks and laying the foundation for the information society belong to these priorities.

Positive adjustment. The main objectives and guidelines of the White Paper are focused on improvements in competitiveness that result in employment growth. The EU target of creating 15 million jobs by the end of the century and reducing significantly the rate of unemployment implies the need for a complex

and clear strategy aimed at facilitating structural change and innovation progress. In order to accelerate structural change the existing rigidities in the labour market and product and service markets should be eliminated. This requires greater market openness through liberalization and the reorientation of government interventions on *positive adjustment and horizontal measures.* Relaxation of interventionist stances should be accompanied by increased public involvement in maintaining an open and competitive environment in all sectors of the European economy. Laying a legal and institutional foundation for the proper functioning of private agents has a crucial role in this respect. In the service sector further deregulation and increased access to the internal market could result in the creation of new jobs. Transferring certain services to the market-place will lead to new private-sector offers of services and numerous job-creation opportunities.

Promotion of R & TD. Promotion of Research and Technological Development tends to increase overall productivity and produce large externalities. Since the present technological system based on generic technologies relies mainly on proprietary knowledge there is a need of promoting RTD in the private sector. This need is emphasized in the White Paper which calls for supporting private firms in their investment and cooperation in the field of new technologies and innovations. Promoting profit-motivated innovations via competition and cooperation should lead to effective transferring of their results into employment growth. This holds particularly for SMEs which are becoming technology-absorbing firms and by nature have a high job-creation capacity. Public actions should also encourage business start-ups in high-technology industries. This is likely to facilitate the re-allocation of resources from low-productivity to high-productivity sectors and produce a spill-over effect on employment. Better access to technology and improved conditions of starting or expanding businesses in high-technology areas may weaken resistance to structural change among industries or income groups with a strong rent-seeking motivation. The Commission *Green Paper on Innovation* is of particular importance in this respect.

Labour market reforms and the broad employment strategy. A common employment strategy aimed at engendering higher rates of economic growth and structural adjustment was agreed by the European Council in Essen in December 1994 and elaborated on by the European Council meetings in Madrid in December 1995 and in Florence in June 1996. Structural adjustment initiatives involve improvements in the functioning of product and service markets and labour market policies focused on upgrading skills and competencies. The proposed multiannual programmes for the development of employment policy prioritize various areas of actions to be undertaken by both EU and national institutions. The examples are additional training programmes for

the unemployed, ensuring more flexible organization of work and of working time, continuing the current wage constraint and promoting local employment initiatives.

Further progress in integration. The completion of a genuine single market in the Community through legislative procedures and strategic programmes may exert strong effects on competitiveness and employment. The key elements should be the removal of the existing barriers to the transfer of services, capital and investment, as well as the further facilitation of the Community competition law and policy. The White Paper underlines the need for a dynamic approach to the internal market. This approach is based on an assumption that the internal market should "develop to meet new needs" and "ensure that a continental-scale open market is fully realized". The central part of the strategic programme aimed at development of the internal market is a Community package to provide a more favourable environment to business. Standardization policy, tax harmonization, SMEs assistance and protection of intellectual property are the core elements of this package. Employment effects can be also expected from the progress in convergence and economic cohesion within the Community. The objectives of the Maastricht Treaty are essential in this respect. The implementation of the convergence and cohesion targets will speed up the internal catching-up process and strengthen Community competitiveness in relation to its competitors. The higher the level of internal catch-up, the more probable the improvement in EU performance in the international market.

REFERENCES

Baldwin, R. E. (1982): *The Political Economy of Protectionism*, in: Bhagwati, J., ed., *Import Competition and Response*, University Press, Chicago.

Baldwin, R. E. (1984): *Rent Seeking and Trade Policy: An Industry Approach*, "Weltwirtschaftliches Archiv", vol. 120.

Baldwin, R. E. (1991): *On the Microeconomics of the European Monetary Union*, "European Economy", *The Economics of EMU*, Special edition No 1.

Betts, J. (1994): *Technological Change, Sectoral Shifts and the Distribution of Earnings: A Human Capital Model*, "Economica", vol. 61.

Bhagwati, J. (1994): *Free Trade: Old and New Challenges*, "The Economic Journal", vol. 104, March.

Calmfors, L. (1994): *Active Labour Market Policy and Unemployment — A Framework for the Analysis of Crucial Design Features*, OECD Economic Studies No 22, Spring, Paris.

Cecchini, P. (1988): *The European Challenge 1992*, Aldershot.

COM/94/615 final, (1995): Annual Economic Report.

COM/96/86 final, (1996): Annual Economic Report.

Cornwall, J. and Cornwall, W. (1994): *Growth Theory and Economic Structure*, "Economica", vol. 61.

Dosi, G. (1982): *Technical Paradigms and Technological Trajectories, A Suggested Interpretation of the Determinants and Directions of Technical Change*, "Research Policy" No 4.

Dixon, P. and Hedley B. (1992): *Currency Union: What Companies Need to Do Differently to Win*, "European Business Journal", vol. 4, issue 1.

Englander, A. S. and Gurney, A. (1994): *Medium-Term Determinants of OECD Productivity*, OECD Economic Studies No 22, Spring.

European Commission (1993): White Paper. *Growth, Competitiveness, Employment. The Challenges and Ways Forward into the 21st Century*, Bulletin of the European Communities, Supplement No 6. Luxembourg.

European Commission (1994): *An Industrial Competitiveness Policy for the European Union*, Bulletin of the EU, Supplement 3. Luxembourg.

European Commision (1995): *Green Paper on a Innovation*, Bulletin of the EU, Supplement No 5. Luxembourg.

European Commission (1995): *The Composition of Unemployment from an Economic Perspective*, Analytical Study No 3. Brussels.

"European Economy" (1989): No 39, March.

"European Economy" (1993): No 54. Annual Economic Report for 1993.

Freeman, C. J. Clark., Soete L. (1982): *Unemployment and Technical Innovation. A Study of Long Waves and Economic Development*. London.

Frey, B. S. (1984): *International Political Economics*. Academic Press. Oxford.

Giersch, H. (1979): *Aspects of Growth, Structural Change, and Employment – A Schumpeterian Perspective*, "Weltwirtschaftliches Archiv", Band 115, No 4.

Krueger, A. O. (1974): *The Political Economy of the Rent Seeking Society*, "The American Economic Review", vol. 64, No 3.

Krugman, P. R. (1993): *The Narrow and Broad Arguments for Free Trade*, "The American Economic Review", vol. 83, No 2.

Layard, R. and Nickell, S. (1986): *Unemployment in Britain*, "Economica", vol. 53, No 5.

Linder, S. B. (1961): *An Essay on Trade and Transformation*. Stockholm.

Maddison, A. (1991): *Dynamic Forces in Capitalistic Development*. University Press, Oxford.

Martins, J. O. (1994): *Market Structure, Trade and Industry Wages*, OECD Economic Studies No 22, Spring.

Mussa, M. (1993): *Making the Practical Case for Freer Trade*, "The American Economic Review", vol. 83, No 2.

OECD (1992): *Document. Structural Change and Industrial Performance. A Seven Country Growth Decomposition Study*. Paris.

OECD (1992): (TEP) *The Technology/Economy Programme. The Key Relationships*. Paris.

OECD (1994): *Information Technology Outlook*. Paris.

OECD (1994): *Employment Outlook*, July, Paris.

OECD (1995): (STI) *Science, Technology, Industry Review* No 15. Paris.

Panorama of EU Industry (1994). European Commision, Luxembourg.

Sakurai, N. (1995): *Structural Change and Employment: Empirical Evidence for 8 OECD Countries*, in: OECD STI No 15. Paris.

Scherer, F. M. (1986): *Innovation and Growth, Schumpeterian Perspectives*. Mass, Cambridge.

Soete, L. (1995): *Structural Change and Employment Growth: The Challenges Ahead*, in: OECD STI No 15. Paris.