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REGIONAL FORUM



on Industrial Cooperation and Partnership
in Central and Eastern Europe and NIS

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Session I

**GLOBALIZATION AND
THE INTEGRATION OF
INDUSTRY IN THE REGION**

Industries of the New Market Economies
of Central and Eastern Europe in the Age
of Globalization: Major Policy Options

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

Industries of the New Market Economies of Central and Eastern Europe in the Age of Globalization: Major Policy Options

by Janusz Kaczurba

Session I

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UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION
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Preface

The present paper has been prepared for the Regional Forum for Central and Eastern Europe and the Newly Independent States (Budapest, May 2000). This event is expected to build on concepts and assessments developed during the UNIDO Forum on Sustainable Industrial Development held in December 1999 and devoted primarily to global trends in world industries and their implications for future growth. Consequently, the objective of the Budapest meeting is to examine how globalization could encompass more significantly transition economies of Central and Eastern Europe as well as NIS countries and how it might relate to the ongoing process of systemic and industrial transition in the region. What follows is an attempt at a brief identification of major issues which form or should form the core of development strategies of transition economies as regards their industrial growth and restructuring. Naturally, these comments commit only the author and should be regarded as suggesting some thoughts for discussion and further research rather than as a full-fledged analysis. Throughout the paper countries of the region are interchangeably referred to as transition economies, reforming economies or new market economies. This terminology is used as a matter of convenience and does not reflect any value judgement, even though the author recognizes very substantial national differences in the degree of maturity of transformation towards market economy standards.

Executive summary

Two major factors are the driving force of globalization: technological change and liberalization of international and national markets. Consequently, a few high-technology sectors, which depend on intensive R&D and global outlets and supplies, have become the principal players in the globalization game. Lower tariff and non-tariff barriers have allowed increasing number of business entities to internationalize production structures through investment abroad, which in turn stimulates trade. Rapid advances in information technologies and networks, radical improvements in capacity of international transportation systems and greater tradability of goods and services have considerably enhanced flexibility of production location decisions. The annual value of cross-border mergers and acquisitions worldwide increased more than six-fold during the present decade. As fewer and fewer products can be manufactured competitively solely on the basis of national inputs, companies are increasingly inclined to outsource their supplies. Global electronic commerce is projected to generate some US\$4.6 trillion worth of sales by 2003, with the United States and the European Union taking an overwhelming share. With cold-war political divisions dissipating, new prospects have opened up for globalization of economic activities, driven by considerations relating primarily to potential of the markets, systemic quality of local business environment and cost and efficiency criteria.

CEE and NIS countries are only now beginning to participate actively in this process. They have to face formidable odds: consequences of previous isolation from international industrial and technological environment and from market-based economic philosophy, shortage of domestic capital and enormous disruptions in industrial potential caused by a breakdown of old production structures. In 1997, which marked a turnaround in economic backslide of several countries of the region, real industrial output compared to its level in 1990 was estimated at 90.5 per cent in CEE subregion, 32 per cent in the Baltic States and 47.5 per cent in the CIS. By now, the fastest recovering CEE countries have either exceeded their pre-crisis industrial output levels or are close to doing so. Within a few years the remaining CEE and Baltic States are expected to recoup their losses in industrial production. For the Russian Federation and most of the other NIS countries the process may extend to later years of the first decade of the new century or—in some cases—even beyond.

The prospects of closer involvement of transition economies into global industrial processes are determined by three major factors: (a) the quality of systemic reforms and structural policies, (b) ability to attract foreign capital; and (c) open and liberal approach to economic interface with the external world. Actual experience suggests that countries which followed more radical scripts were also the first to reverse economic backslide. However, the most important condition of successful transformation is not so much the choice between “shock” and “soft” scenarios, but rather the ability of governments to achieve macroeconomic stabilization before the thin layer of social patience wears off, and to design comprehensive policies and implement them with maximum consistency over time. This aspect, combined with the depth of pre-transformation economic dislocations, underlies substantial differentiation in performance of the economies of the region.

One of the central dilemmas facing all countries in transition concerns industrial policy concepts. Actual attitudes range from vague pronouncements of "no policy" to active government intervention, but it becomes increasingly clear that firms require supportive domestic conditions as a sine qua non of their ability to compete in global markets. Consequently, a trend that now seems to consolidate is that of a moderate approach which tends to focus on three basic requirements: (a) sustainable macroeconomic growth; (b) efficient systemic and regulatory framework, and (c) "capability building" through technological progress, human resource development, promotion of better management, more effective business practices and institution building. Advocates of this approach encourage policy neutrality in the form of "horizontal" measures, where no specific sector is privileged. However, there is also a growing support for creating or enhancing the competitive position of a sector or a group of sectors through "vertical targeting". The latter approach refers to sector-specific measures, which have been used quite extensively in advanced Western economies in various stages of their recent industrial restructuring. Therefore it seems wise to develop pragmatic rather than dogmatic view of these issues.

Infusion of foreign capital, which is indispensable for effective structural change and for giving more global orientation to industrial policies in transition economies, depends principally on general macroeconomic and systemic conditions of these countries and on opportunities offered by their markets. Out of the present FDI stock of about US\$100 billion in the CEE/NIS region some three-quarters are estimated to have gone to just four recipients (Czech Republic, Hungary, Poland and the Russian Federation). This fact reflects international perception of certain advantage of these economies in terms of potential for more global industrial linkages. About two-thirds of FDI in the region has been placed in manufacturing industries. While local markets are still the main targets, more and more investors include the region into their global strategies.

No successful industrial policy is feasible in a globalization era without open and liberal interaction with the international market. Over the last decade world trade in manufactures has been growing more than three times faster than industrial output. The trend is also expected to continue in the coming years, with trade-output growth ratio for merchandise estimated at almost 1.9 for the period of 1997-2006.¹ As a general rule, concentration of international trade in the hands of a few OECD members tends to grow in parallel with the level of technological sophistication within specific product categories. Five top traders in each product category contribute 76 per cent of world exports of office and data processing equipment, 78 per cent of radio, television and telecom products and 87 per cent of aerospace technologies. At the same time, leading producers, especially in the European Union, create extensive demand for intra-industry supplies, as demonstrated by rather high import penetration ratios in the same product groups.

CEE and NIS countries participate only marginally in these flows with the share of only 3.1 per cent in world exports of manufactures in 1998, but are now beginning to improve slowly their position. Between 1990 and 1998 the average annual rate of growth of exports of manufactures from the CEE/NIS region was close to 10 per cent, more than the average for the world economy. So far, however, most of such export expansion has been in the lower and medium-technology range. The cumulative participation of CEE/NIS countries in markets for speciality chemicals, automotive products, electronics, data processing and telecom equipment is even lower than their general share in world exports of manufactured goods.

¹World Bank, *Global Economic Prospects 1997*, Washington, 1997.

However, it is not only the trade volume itself that matters. Transparent and rule-based national trade policies are also essential for encouraging closer involvement of transition economies into global industrial developments. Therefore, participation of the greatest number of CEE and NIS countries in the multilateral trading system would provide greater consistency to their market-oriented reforms.

This aspect is related to regional arrangements, which are becoming the cornerstone of economic partnerships. About four-fifths of international trade is now exchanged within regional blocks, and growth rates for intra-regional trade worldwide are consistently higher than those in extra-regional commerce. Under such circumstances, national industrial policies within trade blocks may increasingly become mutually aligned with a prospect of their eventual unification.² Such, at any rate, may be the trend in those countries of the CEE and NIS region, which negotiate integration with the European Union. EU enlargement will greatly enhance the impact of global industrial trends on economies of new EU members. By the same token, it will also pose a crucial question of measures to be taken in order to alleviate possible unwelcome consequences for non-members and the risk of new divisions in still fragile pan-European economic interface. The answers should be sought now rather than later.

Last but not least, globally oriented industrial policies of transition economies demand adequate institutional and regulatory framework. The major thrust should be directed at the creation and consolidation of laws and institutions relevant to trade regime, monetary and fiscal systems, financial infrastructure, privatization, exchange and securities markets, labour markets, enforcement of product safety requirements, communications infrastructure and competition rules.

In their efforts to get closer to global industrial trends, transition economies face an impressive range of challenges. Average industrial factor productivity equals about one-third of the prevailing OECD levels. R&D spending per capita is several times lower than in more advanced economies and technological life cycle of manufactures is several times longer. Foreign investments, while greatly helpful in alleviating some of these problems, concentrate primarily on local consumer markets and do not provide sufficient encouragement to local innovations and to development of indigenous supply of advanced technologies. Resource intensive industries originally developed to support an introvert economic environment, represent excessively high opportunity cost by keeping scarce domestic means away from more efficient applications. Foreign trade and current account imbalances pose threat to monetary policies and external equilibrium. Furthermore, all these and other factors may impede governments' willingness and ability to move faster on competition standards and other regulatory aspects.

There are, however, many encouraging developments. The quality and effectiveness of macroeconomic policies have generally improved remarkably throughout the region. Privatization, assisted by growing volumes of FDI inflows, is progressing relatively well. Industrial investment has been growing generally faster than in more advanced Western countries, and productivity—while still low—is also on the rise. Systemic reforms have encouraged explosion of entrepreneurship. New consumption patterns provide strong incentive to work harder. Consequently, industries begin to show signs of increasingly active restructuring and higher propensity

²Frischtak, Claudio R., *New Industrial Policy Concepts and Essentials in the Changed Global Context*, paper presented at UNIDO Seminar "New Trends and Challenges in Industrial Policy", Vienna, October 1997.

to export. Expansion of services helps to improve the structure of domestic markets. All such trends set the CEE and NIS economies slowly but surely on the course convergent with global trends.

The above challenges faced by the economies in transition provide a general orientation for possible intervention by UNIDO. Although the role of international organizations is changing, following the changing role of national governments in the global environment, the new opportunities arise requiring not only a close cooperation with the governments but also with the private sector. This necessitates partnership building among all partners concerned. There is no doubt that in this process an extremely useful and catalytical role can be played by UNIDO as a neutral broker with specific role in promoting those common goods which are attributable to international economic organizations, in all those broad areas that are in line with UNIDO's mandate.

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1

Introduction

The concept and process of globalization are more extensively covered in another study presented on this occasion.* The present paper attempts to tackle major systemic and policy issues confronting governments and business communities in transition economies of the region in their efforts to develop more coherent industrial policies and to interact more effectively with the international environment. Therefore, only brief references seem to be appropriate here to those general aspects of globalization which may have particular relevance for policy choices confronting transition economies in their increasingly active but excruciatingly difficult involvement in global orientation.

The general message emerging from the last Forum was that implications of globalization go far beyond industrial policies proper and encompass other related spheres, such as trade, regional development, management techniques, research and technological innovations, consumption patterns, etc. This trend is now increasingly present in transition economies, albeit to a degree that is still incomparably lower than in more mature market economies, while its scope, impact and specifics differ substantially among individual countries of the group. The sources of such distinctions should be sought not only in historically established national industrial characteristics, but also—and in a rapidly growing proportion—in the depth of systemic and structural reforms undertaken within the framework of transition. The countries concerned are therefore faced with multiple dilemmas. The latter relate primarily to making the right choice between various levels of intensity of the reform process and to finding a proper balance between public authorities and market forces as animators of industrial policy formulation and execution. It is obvious, however, that all transition economies are increasingly oriented towards regional and global environment. The speed and character of this movement may vary again from country to country, but the trend itself appears to be irreversible.

Globalization is driven by industrial groups through a combined effect of: phenomenal technological change; liberalization of public economic and trade policies; collapse of cold-war divisions; evolution of the markets for a few key sectors which generate high value added and stimulate changes in the corporate environment. Under the impact of new technologies and freer markets business sectors feel increasingly inclined to internationalize their activities, thus encouraging even stronger interdependence among nations.

Impressive concentration of output in the hands of a few major producers is an eloquent testimony to the magnitude and practical importance of this process. Listed below are some examples of the top five companies' sales as per cent of worldwide industry totals in the early 1990s: passenger cars and trucks (56 per cent); semiconductors (51 per cent); consumer electronic and electrical products (42 per cent); personal computers (47 per cent); chemicals (33 per cent).³ Since that time, mergers and acquisitions may have pushed these figures further upwards.

*Mrak, M., *Globalization: Trends, Challenges and Opportunities for Countries in Transition*, UNIDO paper, 2000.

³*The Economist*, 27 March 1993, "Survey" p. 23, quoted from Morgan Stanley Capital International.

Cross-border mergers and acquisitions (M&A) are among the most dynamic factors behind globalization of industries. This phenomenon is now accelerating rapidly, as firms focus increasingly on what they do well and divest themselves of comparatively less efficient or peripheral operations. Whereas in 1990 only about 4 per cent of major corporations (measured by actual entities and not by the volume of equities) changed their owners, by the late 1990s the figure has come close to 10 per cent. Between 1991 and 1998 the annual value of cross-border M&A increased from US\$85 billion to US\$558 billion. CEE countries participate in negligible proportions in this process, with the total accumulated value of inward and outward M&A reaching only US\$69 billion (4 per cent of the total) and US\$0.3 billion respectively in the entire period 1991-1998.⁴ Moreover, contrary to the prevailing trend in highly developed Western countries where most of inward cross-border M&A aim at obtaining exclusive or dominant position in entities created through mergers, in CEE such majority M&A involve only about a third of all transactions recorded during the present decade. Most of the deals involving business entities of CEE have been done with European countries, which is consistent with the key role played by this group of partners in bringing CEE closer to the global environment. At this juncture it is worthwhile to note, that in this segment of international economy European Union has clearly outpaced the United States. The cumulative total of all outward M&A recorded during 1991-1998 by the three EU members most active in this field (United Kingdom, Germany and France) was estimated at US\$603 billion against US\$463 billion for the United States.⁵ The European leadership may be further enhanced by the introduction of the euro and its consequences in terms of reduced transaction costs, improved transparency of prices in international business deals and greater competition and price discipline.

Sectors most often involved in inward M&A in CEE include: automotive industry, banking and finance, telecommunications, business services, chemical and pharmaceutical industry and retail distribution. All these sectors are among the top ten for all cross-border M&A recorded worldwide in recent years. In this respect the pattern which has developed in CEE is convergent with the prevailing international trends. In most cases the convergence extends also to motivations behind such deals. They include such factors as excess capacity in key markets (automotive products), deregulation (banks and telecommunications) or large R&D costs required to develop new generations of products (pharmaceuticals). Some other factors are specifically related to systemic transition, most notably to privatization, and to the development of previously neglected sectors. This applies in particular to M&A in telecommunications, business services, banking, insurance, social security institutions and retail trade.

Major contributions to globalization have come from a few industries that have generated and absorbed most of new technologies: aerospace, information technology, electronics, automotive products, biotechnology, chemicals and pharmaceuticals. A brief description below highlights some characteristics of those sectors that appear to have co-determined their global orientation.

The *aerospace industry* is essentially a sector of dual industries, civilian and military, dominated by government procurement and government-financed R&D. Recent years have seen a remarkably strong trend towards concentration, which started in the United States and was subsequently replicated in the European Union.⁶ Consequently, the sector is now polarized between these two partners, but

⁴OECD, *Changing Patterns of Industrial Globalization: Cross-Border Mergers and Acquisitions*, document DSTI/IND(99)12, Paris, September 1999.

⁵Ibid.

⁶Postel-Vinay, G., *World Industrial Strategies and Public Policies*, OECD paper DSTI/IND(99)21.

the emergence of new aerospace actors, including in the CEE/NIS region, may provide greater diversity to the industry, especially as regards outsourcing of parts and components.

In the *automotive sector* the focus is now on quality, recyclability, safety and productivity gains. The latter are considerably enhanced by standardization of final products and by shifting the production of spare parts from car makers to specialized suppliers. This process requires close global networking with highly sophisticated data circulation and delivery systems. Technological alliances are also becoming more frequent. Some of them extend to certain transition economies. In fact, the automotive sector has become one of the most important links between new market economies of the region and global industrial environment. The examples involve the Czech Republic (Volkswagen-Skoda), Poland (Toyota, Daewoo, Fiat, Ford, Isuzu), the Russian Federation (Fiat, General Motors), Hungary (Suzuki, General Motors, Audi, Ford), Uzbekistan (Daewoo).

It appears now that future changes in technology systems will pivot around *information technology and biotechnology*. Information technologies, where the cost of a unit of computer power fell by 99 per cent between 1960 and 1990,⁷ have been instrumental in globalizing capital markets and distribution. Another consequence, is the positive impact they have had on the environment of small and medium enterprises, by improving the capacity of SMEs to develop their business relations within regional clusters. Such interaction within a close proximity brings substantial reductions of transaction costs and encourages subcontracting. Furthermore, new information technologies have also substantially facilitated the establishment of new business entities, especially in the SMEs sector.

Information technologies are revolutionizing marketing through *electronic commerce*, to the disadvantage of countries, that do not respond sufficiently quickly and comprehensively to this challenge. By 2003 the global volume of sales of goods and services through electronic commerce is projected at US\$4,600 billion. The United States would lead the way with the aggregate value of electronic sales coming to US\$2,800 billion, or almost a quarter of all business-to-business transactions in the United States. The rest of the world will fall far behind with the total of US\$1,800 billion. At present the corresponding figures for the United States and the rest of the world are US\$700 billion and US\$330 billion respectively. Retail trade networks, car makers, distribution companies and hi-tech sectors that are the leaders behind the trend, report cost savings up to 15 per cent. According to the same projections, only Western Europe, led by Nordic countries, is likely to follow rather closely United States developments in this area. European electronic commerce, growing over the next few years at the rate of up to 140 per cent per annum, is expected to generate almost US\$1,600 billion worth of sales or 6.3 per cent of the total European trade by the year 2004.⁸

Biotechnology is widely recognized in industrial and research policies of highly developed countries as one of the most promising globally oriented sectors. Among all industries, this one received particular attention in the White Book on growth, competitiveness and employment, adopted by the European Commission in 1993.⁹ Between 1985 and 1990 the value of world output in biotechnology products increased from US\$0.2 billion to 1.7 billion, and has been expected to multiply to

⁷WTO, op.cit., p.35, cited from Wolf M., "The Heart of the New World Economy", *Financial Times* 1 October 1997.

⁸Projections made by Boston Consulting Group (BCG) and Forrester Research.

⁹Commission Européenne, *Croissance, Compétitivité, Emploi — les défis et les pistes pour entrer dans le XXI siècle*, Bruxelles 1994.

US\$65-100 by the year 2000.¹⁰ Dramatic developments have occurred concerning shifts in end-use of such products, from almost exclusive application for manufacture of pharmaceuticals only a decade ago, to the presently dominant use as inputs outside the pharmaceutical sector.

In *chemical industries*, the most dynamic and globally oriented sectors are those which provide speciality chemicals. By some estimates, between 1990 and 2005 world sales of speciality chemicals may double, to reach US\$250-300 billion or more than one-third of the total world output of chemical products. Pharmaceuticals industry, which is the most important supplier of speciality chemicals, displays certain important features, which reflect its rapid globalization. First, there appears to be a remarkably fast ownership concentration through mergers and acquisitions. The most successful pharmaceutical groups now register sales in the range of US\$10-30 billion. Second, the sector ranks among the most knowledge-intensive industries, with exceptionally costly R&D requirements. The third feature consists in a growing trend towards alliances and ad hoc arrangements aimed at cost sharing and reduction of development expenditure.¹¹ The chemicals sector is rapidly concentrated globally in the hands of leading manufacturers. Within a short period 1989-1997 ten leading chemical groups increased their share in world sales from 17 per cent to 29 per cent.

For the purpose of this brief review, electronics and other high technology products will be lumped together, as this category cuts across a number of industries, including some which were mentioned in the preceding paragraphs. According to OECD, the combined share of hi-tech goods in total industrial output and in exports of all OECD countries was 11.1 per cent and 16.8 per cent respectively in the first half of the 1980s.¹² By now, the absolute and relative weights of this product category are substantially higher. For example, office and telecom equipment, semiconductors, computers and consumer electronics alone represent 13 per cent of world merchandise exports, more than agricultural goods, mining products or automotive manufactures.¹³ This category shows a number of outstanding characteristics, which encourage globalization of production and sales. Productivity growth in the information technology sector has been five times as high as overall productivity growth. According to research results compiled in early 1990s, material and energy intensity of hi-tech industries, measured per unit of output, was estimated at that time to be at least 30-40 per cent lower than the average for all manufacturing sectors. Domestic costs of a currency unit earned through foreign sales of high-tech products were 2-3 times lower than the average for all industrial exports. Also profit rates per unit of output were several times better than for the industry as a whole.¹⁴

¹⁰*The Economist* 5 October 1991.

¹¹Postel-Vinay, G., op. cit.

¹²OECD, *Science and Technology Indicators*, No. 2, 1986.

¹³WTO, *Annual Report 1998*, p.11, Geneva 1998.

¹⁴Karpinski, A., *Spor o przyszłość przemysłu światowego* [Dispute on the Future of World Industry], Polish Academy of Sciences 1994.

2 Industrial policy in the transformation process

2.1 Major industrial trends in the CEE and NIS region

An underlying assumption adopted in this paper is that the economic fate of transition economies is essentially tied with Europe and that their global orientation will be shaped by trends and policies affecting European economic players. In institutional terms, the process of gradual integration of transition economies into a global framework moves forward. Out of the 15 countries of the CEE and NIS region, all are members of the IMF and World Bank, seven negotiated accession to the European Union, nine are members of the WTO and several others—including big countries such as the Russian Federation or Ukraine negotiated entry into the multilateral trading system. Nine belong to the Bank for International Settlements, seven have accepted current convertibility provisions under Article VII of the IMF and three have joined OECD.

Despite such outward opening the economies of the region remain on the margins of globalization and will need much more time to catch up with more advanced partners. In the process they will have to tackle a number of difficult policy dilemmas. The key questions that need to be solved relate first and foremost to domestic issues which form the core of the present transformation effort. Their list, which is by no means complete, includes:

- ❑ Choice between various options regarding the concept, speed and sequencing of transformation measures
- ❑ The delicate problem of privatization and re-privatization
- ❑ Definition of the right proportions between public policies and market forces as mutually interrelated driving engines of general economic and industrial reform and growth
- ❑ Attitudes towards foreign investment and trade liberalization
- ❑ The scope and modalities of industrial policies
- ❑ Relative weights given to intraregional vs. global business orientation
- ❑ The need to seek solutions to social and economic problems caused by industrial restructuring

For all transition economies the road to globalization must lead through partial demolition of established industrial structures. The data presented in table 1 show remarkable differences in the depth and duration of the initial decline in industrial output. Obviously this has been due to a great number of underlying factors. Those that seem to have exerted the strongest impact relate to the size and physical structure of the economy, the scope of the initial misallocation of resources (including proportions between military and civilian industrial sectors), the level of interaction with international markets and the quality of macroeconomic management in the period preceding and immediately following the collapse of the *ancien régime*.

**Table 1. Change in industrial output in selected countries
of Central/Eastern Europe, the Baltic States and CIS
Between 1990 and 1997 (1990=100)**

<i>Sub-regions and countries</i>	<i>Number of years with year-to-year output decline (including 1990)</i>	<i>Industrial output in 1997 compared to 1990 (1990=100)</i>
Central and Eastern Europe	4	90.5
of which:		
Bulgaria	5	64.9
Czech Republic	4	71.9
Hungary	3	100.0
Poland	2	142.0
Slovakia	4	70.4
Slovenia	4	81.8
Baltic States	5	32.0
of which:		
Estonia	4	75.7
Latvia	5	42.2
Lithuania	5	20.0
CIS	7	47.5
of which:		
Belarus	5	74.2
Russian Federation	7	47.3
Ukraine	7	44.6

Source: Author's own calculations based on: United Nations, Economic Commission for Europe, *Economic Bulletin for Europe*, vol. 46 (1994); vol.47 (1995); vol.48 (1996) and *Economic Survey of Europe 1999, No.1*.

Trends in the NIS subregion command particular attention, because of the size and structure of the industry and the depth of contraction. The total volume of industrial output declined by more than a half and it is estimated that manufacturing potential of CIS countries was pushed back by 15-20 years.¹⁵ Another bias to closer integration with global manufacturing sectors comes from the structure of the industry. In the Russian Federation, among the top 20 enterprises, as many as 18 represent resource-based sectors (fuels and metals) and only two are engaged in manufacturing (automotive industry).¹⁶

The recent rebound in industrial production in the Russian Federation had come primarily from export and import-substituting sectors in response to a weaker rouble. According to an OECD assessment¹⁷ this recovery may not be sufficiently broad based. In particular, strongly depressed energy and transportation prices may provide artificial support to profitability in manufacturing for only as long as they remain below their real market value. Sluggish domestic demand, relatively low rate of investment in fixed assets and difficulties experienced by SMEs may also work against sustainable recovery.

Given the depth and scale of structural aberrations in industries of the former planned economies it is important to recognize that industrial recovery of these countries should be measured not only by improvements in the overall volume of output but also in terms of its product composition. Between 1990 and 1997 the share of machines in total production of manufactures declined in individual coun-

¹⁵Yegorov, G.N., *Vozmozhnosti i realnoye polozheniye s integratsiyey promyshlennovo potentsyala stran SNG w mirovuyu ekonomiku. Rol' nauchno-technicheskogo potentsyala i vysokikh tehnologii v razvitiy ekonomiki stran SNG*, UNIDO paper 2000.

¹⁶This situation is a reversal of trends the in world's industry. Manufacturing companies (mainly engineering and transport equipment) occupy eight slots out of top ten in Fortune's "500" and account for half of the largest twenty firms on the list.

¹⁷The OECD Economic Outlook 1999, (preliminary edition) chapter III, OECD document ECO/CPE(99)16/EO66/3.

tries of the region except Slovenia by 1-5 percentage points. At the same time, divergent trends developed as regards the relative shares of electrical, optical, precision and transportation equipment. In the Czech Republic, Hungary, Poland, Slovakia and Slovenia each of the three sectors improved their relative position in manufacturing, sometimes quite substantially as in Hungary. Such improvements represent movement towards alignment with global industrial trends. In all remaining countries of the region, for which comparable statistics are available, the same sectors continued their downward slide.¹⁸

At this juncture it may be relevant to remind that in mapping out their development and industrial strategies, transition countries should recognize that globalization is by no means restricted to high technology sectors, although the latter are the driving force behind the trend. This observation is highly relevant for CEE/NIS economies where traditional industries (textiles and clothing, food processing, steel, bulk chemicals, construction materials) have no adequate substitute for a foreseeable future and will have to be preserved, albeit in a radically revised shape. It is therefore pertinent to recall substantial advances, which have been achieved globally in improving performance of such traditional sectors.

In textiles and clothing, efforts undertaken in OECD countries to slow-down the decline of the industry concentrated on improving its performance through infusion of modern technology in production and design. The application of CAD/CAM (computer-aided-design and manufacturing) systems and better management of production (e.g. just-in-time concept) helped to cut down costs and employment and appreciably improved the quality of the product. Between 1970 and 1995 average productivity in the textiles and clothing sector of OECD countries increased by almost 40 per cent, roughly as much as in car production. Also the international competitiveness of the sector improved, as can be seen from the share of exports in the industry's output which rose in OECD by half during the same period.¹⁹ Similarly, new technologies in the steel metallurgy of OECD members contributed decisively to restoration of positive growth rates of value added in the sector, while the working time per ton of output decreased by about a half between 1980 and 1995.²⁰ These examples suggest that with a right mix of private initiative and public policy guidance, declining industries may be revitalized and become an economic asset rather than a liability.

2.2 Social impact

Social consequences of the process are most eloquently illustrated by the average absolute downsizing of industrial labour in transition economies by about 30 per cent during the first five years of systemic change. This figure conceals very substantial differences among individual countries. The actual national indicators of reductions in industrial jobs by mid 1990s ranged from 17.6 per cent in Poland and 20 per cent in the Czech Republic to 25 per cent in the Russian Federation and 30-40 per cent in other CIS countries.²¹ Nonetheless, only a fraction of this reduction in employment may be considered as actual adjustment to market economy

¹⁸Wiener Institut für Internationale Wirtschaftsvergleiche, *Countries in Transition 1999: WIIW Handbook of Statistics*, pp. 166-172.

¹⁹OECD, *Main Industrial Indicators*, August 1997.

²⁰Barnett, D.F., *Factors Influencing the Steel Work Force: 1980 to 1995*, STI Working Papers 1996/6, OECD, Paris 1996.

²¹United Nations Economic Commission for Europe, *Economic Survey of Europe 1998* No. 2, p. 37.

“benchmarks” which sets the economies of the region on the course more convergent with structural standards of industries in mature Western economies. This is the case whenever such shifts in labour resources have led to redeployment of workforce to new jobs in industry or services. In this respect some transition economies have been more successful than others have, although for different reasons.

In the period 1990-1998 for which comparable statistics are available the Czech Republic and Slovakia registered continuous growth of unemployment rates from initially low levels to 7.5 per cent and 15.6 per cent respectively. Relative moderation of this trend in the early 1990s had been attributed to delays in undertaking major industrial restructuring programmes and to employment support policies of the state. Uninterrupted growth of unemployment in Croatia between 1994 and 1998 despite growth in output levels may suggest comparatively strong labour deployment in reaction to more efficient industrial performance and improved productivity. In Romania unemployment rates in recent years remained relatively stable at slightly over 10 per cent despite strong reduction in real industrial output in 1997-1998, which might imply certain inertia of the local labour markets. The Russian Federation has registered continuing growth of unemployment rates to well over 13 per cent in 1998, with reductions in industrial labour (about 8 million persons) representing roughly two-thirds of total drop in absolute employment figures between 1990 and 1998. Finally, steep rise in unemployment rates peaked off in Hungary and Poland (in 1995) as well as in Bulgaria and Slovenia (in 1997), but the rates themselves continue to stay at relatively high levels following strong dislocations of production away from less efficient sectors.²²

2.3 Industrial policy setting

As could be seen from this brief review, many factors have contributed to the wide divergence in industrial dynamics of the region in recent years. However, the most important single source of such diversification should probably be sought in national differences in respect of the ability of individual countries to design and pursue a coherent set of policies, both macroeconomic and sectoral, and to put in place institutional reforms, proper corporate governance and restructuring programmes. The underlying concept should be to foster policies conducive to improvements in overall social and economic productivity rather than to pursue selective gains in specific sectors or branches of national economy.

In these respects the region represents a wealth of different experience. Radical reformers from Central Europe are now increasingly followed by other countries, including some States that had emerged from the former Soviet Union. On the other end of the spectrum, several other transition economies experience serious difficulties in the process of economic transformation. A wide panoply of factors, ranging from unfavourable starting conditions to a lack of clear vision of the reform and the adverse impact of stop-go policies, have all contributed to a difficult environment for the implementation of transformation.

At this juncture it may be worthwhile to note that all countries of the region still display rather high levels of vulnerability to negative external business conditions. The impact of the global financial turmoil and of the Russian crisis of 1998 was strongly felt (albeit to varying degrees) by several economies of CEE and CIS and

²²Statistical data cited from Wiener Institut für Internationale Wirtschaftsvergleiche, op. cit., pp. 86-102.

served as a painful reminder of the interrelationships between national economies of the region. Therefore it is important to recognize that macroeconomic imbalances and structural rigidities which may result from inconsistencies of the reforms in some countries tend to adversely affect the region as a whole.

Under the circumstances indicated above, projections of industrial output in the whole region for the next few years are necessarily saddled with much uncertainty. This explains substantial disparities between various forecasts. However, a growing convergence appears to emerge around a general view that in the coming years the rate of industrial output in transition economies may be more uniform than in the past. Consequently, such annual rates in individual countries for the period until the end of 2002 are most often put in the range of 5-7 per cent, with the exception of the Russian Federation and Belarus where they are forecast at substantially lower levels. Relatively fastest growth is expected in the Baltic States, where industrial output in 2002 is expected to be 30-40 per cent higher than in 1998. The corresponding index for individual countries of the CEE subregion is estimated at 20-30 per cent above the 1998 level, which would consolidate the leadership of the subregion in industrial trends among transition economies. A similar growth is also projected for Ukraine, but it would not yet be sufficient to ensure full recovery from the previous fall.²³

²³Kolodko, G., *From Shock to Therapy*, [Polish edition], pp. 352-360, Poltex, Warsaw 1999.

3 Policy dilemmas

There is an ample scope for possible definitions of industrial policies, and the notion itself is heavily tinted with subjective approach. Therefore an attempt at producing excessively normative definitions would not seem justified here. Throughout this paper, industrial policies are understood to mean efforts undertaken jointly by public authorities and business environment to maximize benefits from such industrial structures as actually exist or may be developed under available factor endowment at competitive cost. The notion of competitive cost, which forms an inseparable element of such an understanding of industrial policies, implies gradual reduction and increased transparency of public assistance to industry and constant improvements in disciplines under which such assistance programmes may be maintained.

In developing their approaches to industrial policy, transition economies should recognize that such policy is an outcome of several types of action. First and foremost industrial policy should be rooted in sustainable and possibly fast macro-economic growth and be supported by proper structures through improvement in the functioning of markets for products, services and production factors. This objective requires liberalization of trade and investment regime, more effective regulatory framework, streamlining of labour market, tax reforms, and the like. Secondly, production resources need to be made available in better quality and greater volume, for instance through easier access to investment financing, personnel training, R&D, etc. Efforts aimed at facilitating access to venture capital, grants and subsidies or tax relief measures and other steps taken to encourage investment fall clearly into this category.²⁴ It may be useful to note that venture capital, despite its relatively minor share in international investment flows, plays an essential role in stimulating innovative investment, particularly as regards small and medium enterprises. The third pillar relates to industry-specific undertakings, such as horizontal measures or support for selected sectors, regions or entities. Finally, adequate analytical framework should be developed to assess policy implementation, for example by encouraging more extensive use of international benchmarking as a method for upgrading the quality of production, distribution and management.

Despite much diversified national experience concerning the concept and implementation of systemic reforms, all transforming countries are faced with virtually the same set of fundamental questions related to: social and political costs of transformation; time-sequence and depth of structural policy measures; necessity to overcome egalitarian and nationalistic attitudes towards privatization, ownership and capital; instrumentation of economic and industrial policy; etc.

3.1 Government's role

One of the central issues facing transition countries relates to the scope and modalities of government's involvement in formulation and execution of industrial

²⁴OECD, *Science, Technology and Industry-Scoreboard of Indicators 1997*, Paris 1997.

policies. The need to abandon old-style predominance of the state in industrial policy formulation and execution is not challenged. However, views on what should be a proper mix of "government" and "market" vary widely.

Those, who advocate a declining role of the state in economic policymaking, raise arguments which represent substantial weight. They indicate that the state has limited competence and limited financial potential which, additionally, should be allocated according to criteria implied by opportunity costs. This is particularly true during the transformation, where resources available to the state are incomparably more modest than in more mature market economies. On the other hand, the tasks which belong to traditional functions of the state are comparatively much more extensive and costly and severely restrict the ability to finance direct intervention in economic processes. Secondly, the capacity of the state to solve specific problems differs from case to case and should be exercised without prejudice to macroeconomic stability and with proper regard to preservation of incentives which motivate private and independent economic operators. Consequently and in order to mitigate risks associated with social and political pressures which may be undertaken to excessively broaden economic functions of the state, certain safety valves should be set up early on in the transition process. Such arrangements ought to involve independent status granted to the central bank, legal provisions against financing budget deficits with "empty" money, or proper legal safeguards against discretionary import restrictions.²⁵

There is, however, a growing body of opinion, which favours a limited revival of government's role on structural change within a transparent framework of equitable rules.²⁶ Practical experience of advanced countries provides a number of pertinent clues to a balanced approach to public economic and industrial policies. OECD governments tend to give increasing attention to better interaction between public and private sectors through partnership programmes and other undertakings. This applies, for instance, to a more active participation of public authorities in supporting basic research at the time when private firms tend to concentrate on sector-specific R&D undertakings linked with individual strategies of the enterprise or groups of enterprises concerned.

In nearly all OECD member countries governments have been increasingly shifting towards regulatory mechanisms to improve business environment. Consequently, the focus in industrial support has been moving from selected beneficiaries to economy-wide horizontal measures. Nevertheless, remarkable resources continue to be involved in these and other programmes (including outright subsidies). It is reported that over 1,450 such public support programmes are monitored by OECD alone. By some estimates, annual net financial transfers from national budgets to manufacturing industry in OECD countries may exceed 50 billion, with a substantial (or even dominant) portion of this expenditure directed towards investment.²⁷ This estimate does not include indirect means of support, such as public procurement, R&D contracts and R&D intermediary institutions, which channel substantially more financial resources to manufacturing industry than direct support programmes.²⁸

²⁵Balcerowicz, L., *Socialism, Capitalism, Transformation*, PWN, Warsaw 1997.

²⁶Kolodko, G., op. cit.

²⁷Dziura, M., *Ways of strengthening government-industry partnerships in OECD countries*, in "Restructuring of the National Economy Under the Systemic Transformation", pp. 117-125, Warsaw-Cracow, 1999.

²⁸OCDE, *Public Support to Industry*, document OCDE/GD(96)82.

3.2 Industrial policy options in transition economies

One proposition which emerges in this context is that modern industrial policies in transition economies should be based essentially on horizontal measures. However, it may be necessary in some countries and sectors to emulate earlier experience of more advanced market economies and to employ also sector-specific policies aimed at alleviating excessive social and economic costs of industrial transformation. This may apply, in particular, to sectors with a relatively high regional concentration and with traditionally stable local employment, as well as research-intensive industries, which depend on government's assistance.

The actual experience of transforming economies of CEE and CIS has clearly demonstrated that public authorities in those countries may follow three basic options concerning formulation and execution of structural change in industrial sectors. The first option, which may be called "defensive", consists in shielding their industries from the impact of market instruments and their consequences. Specific policy measures used to attain this objective are generally sectoral rather than horizontal and concentrate on selective use of subsidies, tariff and non-tariff import restraints, arbitrary deferral or outright forgiveness of public debt, discretionary tax exemptions, etc. An alternative, "offensive" approach aims at correcting the effects of the market. Typical examples may involve administrative decisions to develop or modernize specific industries, usually with substantial commitment of public resources. Systemic and fiscal instruments used for this purpose include, most often, tax relief on investment, accelerated depreciation, preferential customs tariff on capital goods and publicly financed R&D. The third option, sometimes referred to as "adaptive", is oriented towards consolidation of market instruments which have demonstrated their applicability and usefulness but which may need to be supported by specific policy actions. Such situations include privatization, demonopolization, deregulation or subsidy schemes which are used to ameliorate the labour market.

There has been no single pattern in which these options manifest themselves in actual policy making in transition economies of CEE and CIS. However, in those countries that have undertaken the most radical reforms, the first approach to be initially used was essentially "adaptive" and based on the belief that the reform-induced recession would "automatically" remove outdated technologies, inefficient management structures and obsolete products. Such expectations have met with only partial success, largely because of insufficiently effective financial and labour markets and inadequate institutional framework. In the process, some of the industries which were regarded as relatively modern at the time (engineering, electronics) were also affected by the recession, sometimes beyond recovery. In Poland, the Czech Republic, Hungary and some other countries such experience may have encouraged more active structural policies, most often combined with certain elements of the "defensive" option described above.

It is also essential to recognize time dimension of the process and specific constraints which relate, *inter alia*, to relatively low mobility of labour in all countries of the region. On the other hand, public authorities should engage more actively in reversing conservative egalitarian sentiments inherited from the recent past and often demonstrated in reluctant or even hostile attitudes towards individual success, private ownership, acquisition of property by foreign investors, etc.

Structural policies, some of which may include certain element of public aid, will need to be combined with commitments to follow internationally established

rules concerning competition, non-discrimination and other principles in all those areas where such rules have been specifically and explicitly developed (steel industry, shipbuilding energy resources and energy transfer, etc.)

3.3 “Hard” vs. “soft” approach to reforms

A fundamental issue facing transition economies relates to the scope and speed of transformation. Controversies around this issue abound in economic literature and need not be considered extensively in this paper. Now, a decade after the breakthrough, the problem may be approached in a more dispassionate way. From this perspective one may feel inclined to admit, that there is no single universal recipe for a successful transformation. The “quality” of transformation is co-determined not only by the radicalism of policy prescriptions, but also by a plethora of other factors. The latter include not only the basics, such as the size and structure of the economy and its systemic features at the point of departure, but also the history of limited reform measures under the previous system. In the context of globalization it may be particularly worthwhile to note that those transformation economies that were the first to emerge from the initial upheaval had been relatively more exposed to institutional global environment (GATT, IMF, World Bank) and to foreign investment than other countries of the region. Such exposure was helpful in terms of easier access to international assistance in the crucial first phase of the breakthrough. Its most lasting impact, however, consisted in greater systemic maturity at the start of the transformation.

On the macroeconomic side the process of transformation was unprecedented in terms of the nature and the severity of the problems to be solved. Given the depth and intensity of transformation-related contraction, all reformers have been faced with a question: what, if anything, should come first—stabilization or growth? Experience seems to suggest however, that it is worthwhile to take the risk of trying to pursue both objectives at the same time. In medium term social and political costs of such policies are likely to be high, but the benefits are substantial in terms of quicker and more comprehensive recovery. Such an approach requires simultaneous and well coordinated action to reduce budget, trade and current account deficits and depress inflation rate. It is also important to sustain aggregate demand by increasing investment and exports, even at the expense of reduced effective private consumption. Out of all these targets, improvement in external equilibrium is particularly important for industrial policy as a determinant of international financial credibility and a precondition for attracting foreign investment and preventing sudden outflows of private capital.²⁹

The relative weight of stabilization and growth options depends also on the general macroeconomic conditions at the starting point of the reform. In particular, countries that had entered the transformation process with relatively low inflation needed less effort aimed at stabilization than countries in deep macroeconomic disequilibrium.³⁰

As regards the speed and scope of institutional and structural transformations it seems obvious that both can be implemented only gradually. In this context a question arises whether the objectives of institutional and structural change should

²⁹See: Kornai, J., *Stabilisation and Growth in Transformation: Hungarian economy case study* (Polish translation, published by the Poznań School of Economics, 1998).

³⁰Balcerowicz, L., op. cit., pp. 204-208.

be pursued following a predetermined script or should they come spontaneously. There is substantial evidence to suggest that, after the initial recessionary shock associated with the systemic breakthrough, transforming economies need to rely more extensively on longer term transformation scenarios, which addresses in particular the structural and ownership aspects concerning industry and other sectors of material production. The benefits of such policy course appear to have been quite evident in countries like Poland, Slovenia or Hungary.³¹

3.4 Ownership transformation and foreign investment

The available empirical evidence seems to suggest that out of all possible approaches to privatization of industry, the most effective way leads through direct capital privatization based on full application of instruments of the capital market. Alternative options, such as transformation of state-controlled enterprises into limited liability companies wholly owned by the state, debt-to-equity swaps or mass privatization programmes are substantially less efficient, more lengthy and exposed to greater risks of abuses by organized interest groups.

In their industrial and growth policies all transition economies have placed high stakes on attracting foreign investment and direct presence of Western corporate entities in their territories. This issue is more extensively covered in another paper presented to the Budapest Forum.³² Nonetheless, a few comments on the subject may be useful also in the present context. Since the beginning of reforms, the volume of foreign investment in transforming countries of the region has been on the rise. In per capita terms it reached the highest level in Hungary, the Czech Republic and Slovenia, while in proportion to GDP the best results have been recorded by Latvia (6.3 per cent in 1997).

By the end of 1999 the inward FDI stock in CEE, the Baltic States and CIS is estimated to have reached about US\$100 billion and continues to be concentrated in four countries (Poland, Hungary, the Czech Republic and the Russian Federation)³³ which together account for three-quarters of the total.³⁴ In fact, the transfers may be even bigger because inflows into the region often remain unregistered. In terms of dynamics of the FDI process the region performs quite well. In the years 1993-1997 for which comparative statistics are available, FDI inflows to CEE, the Baltic States and CIS increased at over 28 per cent per year, i.e. faster than those reported by developing countries (23 per cent) or developed economies (16 per cent).

Industry structure of FDI inflows in CEE and other countries of the region is dominated by manufacturing (60-65 per cent of the total foreign investment), mainly in automotive industries, electrical engineering, food processing and chemical sectors. Domestic markets of transforming countries are still regarded as the most important target for FDI, although this perception is beginning to change. So far, relatively few major corporations, such as ABB, General Electric, Ford, Sony and several others, have decided to locate in the region some of their globally oriented operations. However, their example may find a growing number of followers.

³¹Kolodko, G., op. cit.

³²See: Mrak, M., op. cit.

³³As regards the Russian Federation, this assessment does not make full account of the capital outflow, which followed the Russian financial crisis.

³⁴United Nations, *Investment Report 1999: Foreign Direct Investment and the Challenge of Development*, pp. 69-74.

Volkswagen, Fiat, Procter & Gamble, Philips, Siemens, IBM, International Paper, Michelin, IKEA, Samsung are among those who seem to have accepted a broader vision of the region as an increasingly attractive place for outsourcing inputs for their regional and international networks.³⁵ Several of the above mentioned MTNs have benefited from trade liberalization in CEFTA to expand their operations throughout the region. The prospect of EU enlargement will certainly provide strong incentives to consolidate and broaden this trend.

Even relatively modest foreign investment may have disproportionately strong impact on privatization. Such effects occur, for example, when the investment helps to remove critical impediments to efficiency and good management in related industries or when it improves market infrastructure, as in the case of development of retail chains. Dissemination of new standards of management or development of better professional skills among local employees also belong to undeniable benefits of FDI.

Notwithstanding the importance of all these developments, the actual direct impact of foreign sector on improved global performance of industries in transition economies is still quite limited and restricted to a fraction of all units in the sector. Indicators related to the relative share of this sector in national R&D and exports provide sufficient evidence in support of this statement. In Poland, for example, less than 4 per cent of all entities with foreign capital participation contributed in 1995 two-thirds of all exports generated in companies with foreign equity. The structure of FDI by sectors in countries of the region suggests that probably less than one-third of the cumulative present value of foreign investment may have gone to industries which were listed in earlier paragraphs of this paper as the leaders of globalization. Practical evidence from CEE and CIS countries with the biggest relative share of FDI does not seem to indicate that such investment has significantly contributed to local R&D efforts or to promotion of original innovations. High import requirements of foreign sector in economies of the region are not matched by adequately robust exports, because a substantial (sometimes even predominant) part of the investment itself is located in non-exporting sectors. The conclusion to be drawn from these comments is that foreign investment, important as it is for the economies of transforming countries, contributes only in a limited way to global orientation of these countries.

Naturally, the foregoing comments are in no way intended to cast doubt on the necessity of attracting FDI. The intention is rather to suggest that local governments should develop a more coherent and clear vision of their own sectoral objectives to be served by FDI inflows. Such an approach would provide public authorities with better guidance in decisions concerning participation of foreign capital in privatization or green-field projects, without prejudice to investors' policies based on concepts of good corporate governance.

The majority of corporations are no longer located entirely in one country or region. Their respective functions tend to be subordinated to the criterion of comparative advantage offered by each location.³⁶ Global value chains in which they increasingly operate increase returns on investment and help to reduce risks associated with national or regional business cycles. Highly efficient communication systems ensure internal coherence of the group. Increased emphasis is put on

³⁵H.-P. Lankes, A. J. Venables, *Foreign Direct Investment in Transition: the Changing Pattern of Investment*, "The Economics of Transition", No. 1.

³⁶Colin Meyer, *Corporate Governance, Competition and Performance*, OECD Economic Studies No. 27, OECD Paris 1996.

skill-development policies. Corporate governance techniques tend to reduce international discrepancies in management.³⁷ Transition economies that wish to be more actively involved in the global industrial and trading environment should waste no time in adjusting their business environment to these circumstances.

In a globalizing economy firms have growing and diversified opportunities for attracting capital. Investors, equally, may benefit from a wider selection of investment options. Corporate governance exerts a strong impact on investors' decisions and on corporate strategies relating to risks, technologies, investment in human capital and other critical factors which determine location of industrial facilities and their interaction with the local business environment. Legal and systemic infrastructure, as well as market institutions differ among countries. Such differences are even more pronounced in transition economies. It is therefore essential in the context of globalization, that the framework parameters developed in CEE and CIS countries with regard to corporate law, securities and investment rules, tax regimes, insurance and social security systems, stock market regulations, accounting standards, etc., should be consistent with the prevailing modes followed in corporate governance practices. On the other hand, such practices themselves should be scrutinised internationally with a view to developing non-mandatory core principles of corporate governance.

³⁷For more detailed presentation of these issues see: proceedings of the UNIDO Forum on Sustainable Industrial Development, Vienna 29 November-1 December 1999.

4

External dimension: outward oriented industrial policy

4.1 Interaction with the international market

Next to quality of systemic reforms and structural change, the level of interaction with the international market is another essential prerequisite of any successful industrial policy aimed at sharing in the benefits of globalization. For the purpose of this analysis, the concept of external interaction will focus on trade and the rules of the trading system, on regional integration and, briefly, on foreign investment.

World trade in manufactured products has become one of the most striking indicators of industrial globalization. Whereas world output of manufactures was growing between 1990 and 1998 at an average annual rate of 2 per cent, international sales in this category of merchandise have been expanding at 7 per cent per annum, a little faster than all merchandise trade.³⁸

Table 2 presents a concise view of high concentration of international trade in the hands of a small group of countries. By mid-1990s worldwide sales of machinery and transport equipment (including automotive products, office and data processing equipment, audio-visual and telecommunications technology and aerospace products) constituted 55 per cent of total manufactured OECD exports, and continued to consolidate their position at the expense of less sophisticated manufactures. Five top traders in each product category claimed well over a half of total OECD exports under each heading. Such dominance was particularly high in technology-intensive products, with the share of five leading exporters ranging from 76 per cent in office and data processing and 78 per cent in audio-visual and telecom equipment to 87 per cent in aerospace technologies. At the same relatively high levels of import penetration registered by leading OECD producers and exporters suggest very active international intra-industry trade, which is one of the characteristic features of globalization. This is particularly true for the European Union. High import demand of EU members in globally oriented manufacturing sectors may offer opportunity to transition economies of the region. Relatively lower import penetration indicators in the United States and Japan in some product groups may be explained by the existence of particularly extensive local clusters of suppliers and subcontractors with well-developed linkages with final producers within each country.

While CEE and NIS countries still play a modest role in such trade flows, they may rightly claim that trade has become for them a major factor of economic growth and structural change. Between 1990 and 1998 manufactured exports of CEE, CIS and the Baltic States were increasing at an average annual rate of 10 per cent, much faster than the corresponding indicator for the world economy (7 per

³⁸WTO, *Annual Report 1999: International Trade Statistics*, Geneva 1999.

Table 2. Leading OECD exporters of manufactured goods and their import exposure by selected sectors in 1994

<i>ISIC classification of manufacturing sectors (in brackets: sector's share in total OECD manufactured exports)</i>	<i>Five leading exporters</i>	<i>Share in sector's exports (per cent)^a</i>	<i>Import penetration (per cent)^b</i>	<i>ISIC classification of manufacturing sectors (in brackets: sector's share in total OECD manufactured exports)</i>	<i>Five leading exporters</i>	<i>Share in sector's exports (per cent)^a</i>	<i>Import penetration (per cent)^b</i>
ISIC 31: Food, beverages and tobacco [7.4 per cent]	United States	16.1	4.2	ISIC 37: Basic metals [5.1 per cent]	Germany	15.6	22.1
	France	13.5	18.0		Japan	13.3	4.5
	Netherlands	12.8	42.1		Belgium	8.1	(n.a.)
	Germany	10.4	15.7		United States	7.1	16.2
	United Kingdom	6.6	16.5		Canada	7.0	32.3
ISIC 32: Textiles, clothing and leather goods [5.7 per cent]	Italy	22.0	20.7	ISIC 38: Metal products, machinery and equipment [55.2 per cent]	Japan	21.4	10.0
	Germany	13.3	62.0		United States	18.9	57.1
	United States	10.3	29.7		Germany	10.6	63.5
	France	9.0	46.7		France	7.2	57.2
	Belgium	6.0	84.2		United Kingdom	6.8	74.2
ISIC 33: Wood products and furniture [2.1 per cent]	Canada	22.4	32.9	ISIC 3825: Office and data processing equipment [4.6 per cent]	United States	25.3	36.7
	United States	12.8	10.7		Japan	24.7	6.4
	Italy	12.3	10.6		United Kingdom	11.7	63.5
	Germany	9.5	20.5		Germany	7.8	33.5
	Sweden	7.0	23.5		Netherlands	6.8	76.2
ISIC 35: Chemicals [17.1 per cent]	Germany	16.7	23.0	ISIC 3832: TV, radio and telecommunications equipment [7.3 per cent]	Japan	32.3	3.1
	United States	15.7	11.6		United States	22.8	27.9
	France	10.0	31.4		Germany	10.1	28.2
	Japan	9.0	6.7		United Kingdom	9.1	37.3
	Netherlands	7.6	93.5		Netherlands	3.8	(n.a.)
ISIC 3522: Pharmaceuticals [1.9 per cent]	Germany	15.5	29.3	ISIC 3845: Aircraft and space [3.0 per cent]	United States	44.9	14.6
	Switzerland	11.8	(n.a.)		France	17.6	46.6
	United States	11.6	5.8		Germany	12.7	99.9
	France	11.2	21.0		United Kingdom	9.1	37.7
	United Kingdom	11.2	23.6		Italy	3.0	54.7

Source: Based on data contained in OECD, *Science, Technology and Industry Outlook 1998*, supplementary table 3.5. Paris 1998.

^aCalculated as a percentage share of total OECD exports supplied globally in each ISIC category listed in column 1.

^bRatio of imports to domestic demand in each ISIC category, with demand measured as domestic output plus imports minus exports.

cent) and faster than the total merchandise exports of this group of countries (7 per cent). This improvement is another confirmation of a generally positive trend towards greater interaction with international markets for industrial products. Total manufactured exports recorded by this group of trading partners reached US\$126 billion in 1998, of which 58 per cent was destined for Western Europe (a substantial increase from 43 per cent in 1990) and a quarter was exchanged within the group itself.

4.2 Modest position in trade

Notwithstanding these positive developments, all transition economies of the region occupy a marginal position in world exports of manufactures, with the share of only 3.1 per cent in 1998, even though this indicator improved by half, from 2.1 per cent in 1990.³⁹ The proportion of manufactures to total CEE and NIS exports (55.2 per cent in 1997) is still substantially below the average for world trade (74.1 per cent).⁴⁰ Moreover, out of a modest flow of manufactured exports, well over two-thirds are provided by only four countries of the region: the Russian Federation, the Czech Republic, Poland and Hungary (listed in descending order of export values). The same countries are also the region's leading importers of manufactures.⁴¹

Tables 3 and 4 clearly illustrate the distance, which still separates transition economies of the region from prevailing international structures of output and trade in manufactures in industrially advanced countries. In fact, the total value of such exports recorded by all transition economies combined was in 1998 lower than the corresponding figure for just Belgium and Luxembourg alone. The problem, however, goes beyond mere volume of foreign sales and extends to their product composition. The relative weight of iron and steel metallurgy in total CEE/NIS exports is far greater than in any other developed or developing region. This fact, however, does not imply that transition economies enjoy a correspondingly high competitive advantage in steel manufacturing and exports. In fact, the industry lags behind its major foreign competitors in terms of some of the most essential parameters that determine its medium and long-term international position, such as: productivity, product quality, management, terms of trade and financial standing. Under these conditions productive capacities of the industry, steel exports from

Table 3. Shares of major product categories in trade in manufactures by selected regions, 1998
(Percentage)

Regions	Iron and steel		Chemicals		Machinery and transport equipment		Office machines, data processing and telecom equipment		Automotive products	
	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports	Exports	Imports
WORLD	3.5	3.5	12.5	12.5	54.0	54.0	17.0	17.0	13.1	13.1
North America	1.3	2.6	11.7	7.8	63.9	60.0	18.1	18.9	15.9	19.1
Western Europe	3.7	3.7	15.9	14.5	50.5	50.4	11.0	14.5	14.4	14.2
Asia	3.0	3.6	7.1	12.8	57.7	56.3	29.1	26.2	9.0	4.2
CEE and NIS	14.6	4.8	13.5	14.3	36.4	47.3	6.2	8.7	10.5	11.8

Source: WTO, *Annual Report 1999, International Trade Statistics*, selected tables in section IV, Geneva 1999.

³⁹Ibid.

⁴⁰WTO, *Annual Report 1998: International Trade Statistics*, Geneva 1998.

⁴¹Ibid.

Table 4. Exports of manufactures from selected transition economies compared to global trends (billion dollars)

Countries/regions	Manufactures	Machinery and transport equipment	Office, data processing and telecom	Automotive products	Chemicals
WORLD	4 010.30	1 994.80	681.45	524.89	503.20
European Union -15	1 762.22	910.40	202.35	267.68	272.32
Extra-EU exports	690.86	371.03	68.94	78.36	102.94
CEE/NIS, of which:	125.80	45.80 ^b	7.80 ^b	13.20 ^b	16.98 ^b
Bulgaria	2.64	0.44	0.19 ^c	...	0.96
Croatia	4.41	0.19	0.12 ^c	0.08	0.60
Czech Republic	23.00	10.87	0.51	3.80	2.50
Estonia	3.06	0.85	0.32
Hungary	19.03	11.96	4.17	1.41	1.61
Kazakhstan	3.23 ^a	0.16	...	0.04	0.48 ^a
Latvia	0.70	0.13	0.11
Lithuania	2.63	0.84	0.04 ^c	...	0.44
Poland	21.81	8.29	0.88	1.89	1.90
Romania	6.80	1.22	...	0.07 ^a	0.80 ^a
Russian Federation	23.41 ^d	8.20	0.11	0.65	6.20
Slovakia	9.14	3.94	0.53 ^c	1.85	1.51
Slovenia ^a	8.25	3.04	0.15	1.02	0.94

Sources: (1) WTO, *Annual Report 1999, International Trade Statistics*, Geneva 1999, various tables.

(2) WTO, *Annual Report 1998, International Trade Statistics*, Geneva 1998, various tables.

(3) Official national statistical yearbooks of CEE/NIS countries for 1998 and 1999, with recent updates available on Internet.

^aData for 1997.

^bAuthor's estimates.

^cIncluding other precision equipment.

^dExtra-CIS exports of manufactures amounted to US\$16 billion.

CEE and NIS, as well as the share of the sector in total foreign sales, are likely to decline as the industry comes under restructuring programmes, particularly in countries acceding to EU. In chemicals, CEE and NIS partners are generally close to other developed regions in terms of the industry's share in exports of manufactures. This observation relates, however, to the general index. A more detailed breakdown would show substantial differences in product structures, with CEE and NIS region heavily oriented towards bulk chemicals rather than more sophisticated, higher value-added items which account for a rapidly growing proportion of the industry's output and sales in OECD countries. On a positive side, such differences may imply a considerable potential for long-term complementarity between chemical industries of CEE and NIS countries and advanced stages of downstream processing in more developed regions.

In contrast, the relative contribution of machinery and transport equipment to CEE and NIS exports was in 1998 much lower than in other regions except Africa and the Middle East. As shown in table 3, specific product groups within this general category are subject to widely differing trends. A 6.2 per cent share of office, data processing and telecom equipment in manufactured exports of CEE and NIS is the second lowest regional average and exceeds only that of Africa (2.9 per cent). Out of all transforming economies Hungary has shown the most visible progress in exports of information and telecommunications technologies, with foreign sales amounting to almost US\$4.2 billion in 1998. This trend is consistent with strong improvements in performance of Hungarian technology intensive industries, which—between 1990 and 1997—increased their share in total manufactured output from 10.3 per cent to 16.7 per cent, and in total exports of manufactures from 17.6 per cent to 45.8 per cent, more than any other transition economy.⁴² The

⁴²Wiener Institut für Internationale Wirtschaftsvergleiche, op. cit, pp.168 and 394.

general situation is somewhat better in the automotive sector, which participates in CEE and NIS exports in proportions much closer to those existing in developed Western countries. In this sector, beneficial effects available for transition economies from globalization of industrial activities and trading relationships are perhaps more visible than anywhere else. Recently the trend extended also to Kazakhstan with important projects to establish local car manufacturing facilities.

Table 4 relates these results to the product structure of world exports. Since the transformation began, some individual CEE countries have increased the absolute value of their foreign sales of machinery and equipment, including high-technology items. In this respect Hungary, Poland and the Czech Republic have noted the most significant improvements. However, better performance of those and some other exporters from the CEE/NIS region has been largely offset by less active engineering exports from other countries of the group, despite dynamic expansion of international markets for machines and equipment. Consequently, the share of CEE/NIS economies in total world exports of engineering products (2.2 per cent in 1998) has not improved since the transformation began. The situation is even worse within specific product groups, such as information and telecommunications technology (1.1 per cent) or biotechnology (where CEE/NIS countries are practically absent as exporters).

Out of all trade areas, the single European market has been and will remain the key structuring element for externally-oriented industrial output generated in transition economies, including SMEs. Experience shows, that under the impact of disciplines, but also incentives, offered by the single market, more than half of SMEs in EU member States have crossed their national boundaries and have entered the European or extra-European markets with their products and services. This evolution occurred within a short period starting in the mid-1980s. Consequently, marketing and product strategies of such SMEs have become internationally oriented. The euro provided additional incentive by eliminating exchange risk for most of EU outlets, while new information technologies reduce operational costs borne by sellers. Such developments follow largely United States practice of the early 1990s, which has supported productivity and innovation in the United States economy. There is no good reason why such trends should not extend gradually to transition economies of the region as well.

4.3 Multilateral framework

Active trading relationship, important as it is for a successful transformation, should be pursued within the framework of multilaterally established rules and institutions. This appears to be a necessary condition for a predictable and stable development of long-term business ties, which form a backbone of the global approach to industrial evolution. Multilateral institutions, with their natural global outlook, play a significant role in the evolution of industrial patterns of transition economies. This impact is generated by convergence of policy advice and formal systemic framework created and enforced by such bodies. The role of WTO, IMF, World Bank or EBRD in encouraging transformation and developing new approaches to industrial policies, competition and trade has been generally recognized throughout the region.

The spectacular (and, hopefully, only temporary) failure of efforts to launch the next negotiating exercise of the WTO (the "Millennium Round") in Seattle in De-

ember 1999 has served as a painful reminder of the sensitivities which confront this multilateral institution. And yet, there is also a positive way of looking at the setback of the Seattle ministerial: emotions got high because the system has been trying to avoid window-dressing and deal with real issues arising from tangible interests. On the other hand, WTO should urgently respond to a wide array of problems, including a substantial package of challenges resulting from globalization. There is a need to address rules of competition at the corporate level, look into responsibilities of foreign investors vis-à-vis their host countries or redress imbalances which may have been created by the Uruguay Round to the detriment of less advanced trading partners.

It is therefore essential that those transition economies, which are still outside rule-based WTO, should assume their membership without unnecessary delay on the basis of normal rights and obligations. Hopefully, accessions of Kyrgyzstan, Latvia and Estonia may herald a good trend. Future entry into the WTO of the Russian Federation, Ukraine and other candidates from the region would enhance the integrity of the multilateral trading system. At the same time it would provide the countries concerned with an incentive to ameliorate their domestic economic, legal and institutional systems in so far as they relate to international trade and investment in their global dimension. At this juncture it may be useful to recall that, as recently as a year ago, there was still a sizeable list of outstanding issues confronting negotiators for WTO accession of several countries of the region. Nearly all items on the list involved some of the fundamental aspects of a market based system that need to be more effectively developed and enforced in the economies concerned: equal legal status of public and private enterprises; reduction and control of state subsidies; better protection of intellectual property; greater institutional transparency; equitable taxation of domestic and foreign entities; stable rules concerning access to national markets for goods and services.⁴³

As the present paper is focused on transition economies of Europe, the question of regional economic and trading arrangements will be confined to Europe as well. Obviously the most important in this respect is the prospect of EU enlargement. In a longer run, this factor, more than any other, is expected to foster the globalization of CEE economies. This process will be accomplished through a combination of measures, such as: improved resource allocation, integrated management techniques, adoption of industry-related *acquis communautaire*, and infusion of new technologies.

Association agreements between CEE countries and West European integration groupings and subsequent initiation of EU enlargement have given rise to concerns outside Europe that the continent might shift to a more inward focus and that the EU would place a lower priority on multilateral issues, including further multilateral trade liberalization. Such fears do not appear to be well founded. It is true that during three decades from the early 1960s to the early 1990s the share of intra-regional trade in total foreign commerce of the present EU members increased by a few percentage points. However, in parallel with a growing speed of globalization, this trend seems to have levelled off since the first half of the present decade, with the share of intra-EU exports and imports in the total EU trade now amounting to slightly over 60 per cent. By today's proportions, accession of new member States would increase manufactured exports of the enlarged EU to non-EU destinations by slightly over 5 per cent.

⁴³United Nations Economic Commission for Europe, *Economic Survey of Europe 1999, No. 1*, p. 161, Geneva 1999.

4.4 Regional cooperation

At this juncture a pertinent question emerges: what may be the potential impact of EU enlargement on those countries of the region, which will remain outside the integration process. The answer is by no means certain and depends on a number of factors. The most important determinants are: the level of acceptance of multilateral trade and competition rules by non-member countries, international complementarity of their industrial output, degree of involvement of national industries of non-member States into multinational structures and the evolution of import regimes of the European Union and the applicants for EU accession. It is expected that EU enlargement will boost trade and foreign investment in the region, including countries remaining outside the integration. This aspect appears to be recognized by the relevant EU institutions, as reflected in recommendations concerning future cooperation with the Russian Federation and other countries of the NIS region.⁴⁴

In the context of industrial globalization, potentially important measures aimed at mitigating adverse effects of EU enlargement on countries that will remain outside the scheme should be sought in strengthening subregional integration. The same is also true for the candidates to EU enlargement as they prepare themselves for future accession. This comment refers to regional undertakings, such as CEFTA, Baltic States cooperation or initiatives being undertaken within CIS with a view to fostering closer industrial interaction within their respective constituencies.

Positive trends in industrial growth and global orientation of the transforming economies of the region are supported not only by full-fledged integration schemes, but also by less formal regional arrangements. One useful example involves cooperation projects in the Baltic Sea Region (BSR).

The BSR comprises 11 countries, including the north-western part of the Russian Federation. Its focus is mainly on environmental aspects of economic growth in the region. The principal policy document, Agenda 21, has been jointly worked out by governments of BSR states to address this issue against a wider background of specific goals related to the development of industry, agriculture, energy, fisheries, forestry, tourism and transport.

According to a joint assessment⁴⁵ of BSR governments, the region is expected to show high dynamic growth, primarily due to the potential of the structural change which will continue in the transition economies of the Baltic countries. It is assumed that all major attractivity factors will be at play in the BSR: the size of the market, trade, positive quality of local business environment, R&D, networking between enterprises and industrial branches, etc. The impact of these factors is likely to be enhanced by the on-going development of a closely connected regional market. The latter is gradually being consolidated on the basis of improved telecommunications, rapid expansion of transport flows or advanced projects to integrate energy networks.

⁴⁴Economic and Social Council of the European Communities, *Opinion on the EU northern dimension including relations with Russia*, Brussels 1999.

⁴⁵Sustainable Development of the Industrial Sector in the Baltic Sea Region, Final Report, February 23, 1998.

5 Institution building

Institutional vacuum and institutional deficiencies left after the demise of the previous system inevitably slow down the process of adjustment. Successful industrialization conducive to encouraging global interaction of industries in transition economies requires that this vacuum be filled as expeditiously as possible. This observation applies both to the regulatory framework, including in particular competition rules, and to institutions that need to be strengthened or developed at the national and subnational levels, such as regional structures, professional and business organizations, commodity and stock exchanges, institutions dealing with market supervision, production quality control systems, customs services, etc.

5.1 Regulatory reform

Regulatory reforms are critically important for providing consistency and stability to the transformation process and for ensuring its compatibility with global trends in industrial and economic environments. It may be therefore useful to refer briefly to major principles that are being developed in this domain by the OECD. The central rule is to ensure that regulations and regulatory procedures should be transparent, non-discriminatory and efficiently applied. It is the responsibility of political authorities to set clear objectives for the regulatory reform and to establish a workable framework for their implementation and review. Economic regulations in all sectors ought to be assessed and streamlined, with a view to enhancing competition and retaining only those regulations, which have convincingly demonstrated their usefulness for serving public interests and for supporting economic and social policy goals. The process of regulatory reform should be anchored as much as possible in international agreements and multilateral disciplines. Finally, important linkages with other policy objectives should be identified and used to support the reform.

Countries that seek membership in the EU are constantly reminded that the effective application and enforcement of EC competition policy within the enlargement process is crucial to the success of the European integration model and to the proper functioning of the internal market. That is why specific provisions related to competition have been incorporated into all Europe Agreements. In fact, even in the pre-accession stage, gradual approximation to EU competition standards is already expected of future EU members. This applies in particular to sectors which are covered by particularly stringent competition rules, such as the steel industry.

This issue, however, is not restricted to future EU members, but has a much wider relevance. Indeed, the introduction of competition policy is one of the most essential pre-conditions for transition of CEE and NIS countries to genuine market economies and for successful restructuring of their industrial sectors. Liberalization of prices, trade and foreign investment, critically important as it is for the establishment of reasonably functioning markets, is not by itself sufficient to ensure effective

competition. Even after a decade of intensive transformation, some of the leading reformers in the region still experience difficulties in removing all obstacles to trade. Incidentally, the last observation may also be relevant to a number of mature market economies. The role of the foreign sector in encouraging competition also has some limits, because foreign investment may be inclined to focus only on selected sectors and under a cover of trade protection extended by governments. Furthermore, many markets remain predominantly local, while national markets may be separated from external competitive environment. Other hindrances to competition could involve preferences given to established business entities over new firms in access to financial resources, or favourable treatment enjoyed by existing monopolies. Privatization schemes may be designed in such a way as to avoid breaking-up public monopolies in order to retain at least some control over such structures. Under these circumstances, reforming economies are best advised to put in place a comprehensive competition law and enforcement mechanism, so as to compensate for the deficiencies of their market mechanism and their institutional system.

State aid control is essential for the establishment of proper competition standards applicable to industrial restructuring. However, the introduction of such controls in CEE and NIS has turned out to be much more controversial and politically sensitive than most of the other market-oriented measures. Such misgivings generally overlook the fact, that international agreements authorize state aid consistent with specific problems of a transition economy, even though recourse to such instruments may need to be carefully circumscribed. One of the most important conditions that must be fulfilled is to create transparency in the granting and monitoring of state aid. Such disciplines are needed not only in countries that are associated with the EU but also in other states of the region. Without adequate state aid rules and controls all other reform-oriented structural policy measures are unlikely to become sufficiently consistent and effective in rational allocation of resources.

6

Hopes and fears

6.1 Challenges

Industrial sectors in CEE and NIS face a formidable challenge: how to combine the dismantling or reduction of old and outdated capacities with the development of a new potential, based on a radically different economic, technical and managerial concepts. Relatively low productivity levels, inadequate R&D intensity, severe scarcity of domestic capital and insufficiently developed entrepreneurial skills compound the complexity of this task.

The distance in labour productivity between transition economies and more advanced Western countries is eloquently demonstrated by differences in per capita value added in sectors of material production, using United States levels as a benchmark. Between 1985 and 1996 all three OECD members from the CEE region, despite measurable improvements in their absolute productivity rates, had experienced further deterioration in their relative performance:

	1985	1996
United States	100	100
Czech Republic	26	16
Hungary	21	20
Poland	22	17

Source: OECD, Science, Technology and Industry Outlook 1998, p.104-105, Paris 1998.

The accuracy of these estimates is, of course, far from certain because of a number of methodological aspects. Consequently, the numerical result should be regarded merely as an interesting hypothesis. Furthermore, many other OECD countries have also shown deterioration against United States benchmark during the same period. However, the proportions are striking, with the corresponding figures for other countries in 1996 substantially higher, ranging from 27 (Portugal), 33 (Mexico) and 40 (Spain) to 60-80 in the best performing OECD members. Given the general condition of the three OECD economies of the region it is safe to assume that other CEE/NIS countries would score even lower results in a similar comparative exercise.

6.2 Responses

Solutions to these issues need to be sought in a rapidly changing international industrial environment, where extractive and manufacturing sectors continuously diminish their relative importance as job providers. Extrapolations of this trend would suggest that by the year 2010 only a little over 10 per cent of the workforce in some of the leading developed countries might still be directly engaged in industrial occupations, although the actual level is certain to vary substantially among countries. This prospect has two very important implications for transition econo-

mies as they attempt to interrelate closer with global trends. The first implication concerns productivity. If the trends described above continue, it will take decades for industrial productivity per worker in transition economies to come close to the level of highly developed countries. The consequences for international competitive position of CEE and CIS countries are obvious. The second implication relates to strains in domestic labour markets. Under the impact of international competition and global corporate governance practices followed by foreign investors, countries in transition are likely to be exposed to pressures to reduce industrial employment in line with the general trend. This will inevitably exacerbate social tensions caused by unemployment, especially in countries that will need to relocate substantial segments of rural population as part of adjustments to expected accession (Poland, Bulgaria, Romania).

One should also not lose sight of further structural changes, which will affect world industries. It is expected that industries which are harmful to the natural environment will continue to be phased out and replaced with more environment-friendly modes of manufacturing. Under the impact of new technologies in manufacturing and communications, historically established industrial centres are certain to gradually decline in importance for the benefit of new locations, determined primarily by the relative costs of mobile factors of production. Another anticipated development related to new technical achievements may be described as "rejuvenation" of some of those industrial sectors that are now widely recognized as mature or even receding.

All these challenges give rise to fears and tensions caused by sometimes conflicting policy objectives, divergent economic interests, social frustrations and painful awareness of a distance to more developed partners in the global market. The distance is long indeed and it is primarily up to industrial entities themselves to make it shorter.

6.3 R&D technologies and innovations

Striking differences in technological potential and innovations are among the most essential impediments to a more successful performance of industries of transition countries within the global industrial framework. In Western Europe, R&D expenditure was growing in the first half of the 1990s at some 5 per cent per year.⁴⁶ According to a recent report of the Committee for Scientific Research of the Polish Academy of Sciences, R&D expenditure per capita amounts in France or Germany to some US\$460, roughly two and half times more than in the Czech Republic or almost eight times more than in Poland.⁴⁷

Worldwide trend towards concentration of R&D spending on product groups, which are exposed to strong globalization, is clearly confirmed by indicators measuring intensity of R&D as percentage of value added in the corporate sector. The latest available and statistically consistent data chains cover the years 1994 and 1995. R&D spending at that time was equal to 6.6 per cent of total value added in manufacturing industries of OECD countries. However, the spread across individual product groups was quite extensive, from 0.9 per cent for low technologies to 22.5

⁴⁶European Commission, *The European Report on Science and Technology Indicators*, Brussels 1994.

⁴⁷KBN (Committee for Scientific Research) *Stan nauki i techniki w Polsce* [The State of Sciences and Technology in Poland], Warsaw, June 1999.

per cent in high technology sectors. Again, the highest average OECD indicator of R&D intensity was achieved in industries which have been described throughout this paper as particularly susceptible to globalization: aircraft and space technology (34 per cent); pharmaceuticals (22 per cent); office and data processing equipment (30 per cent); audio-visual and telecommunications equipment (17 per cent); scientific apparatus (16 per cent).⁴⁸ The same preference for more advanced sectors is also visible in individual countries, although international differences in relative weight given to individual industries may vary quite substantially (table 5).

Table 5. Intensity of R&D in hi-tech industries of selected OECD countries in 1994/1995

(Percentage of value added in the corporate sectors)

<i>Industries</i>	<i>Total OECD^a</i>	<i>USA^a</i>	<i>Japan^a</i>	<i>Finland^b</i>	<i>France^c</i>	<i>Germany^c</i>	<i>Italy^c</i>	<i>Netherlands^c</i>	<i>Spain^c</i>	<i>Sweden^c</i>	<i>United Kingdom^c</i>
Total											
manufacturing	6.6	8.0	7.3	5.8	6.8	6.2	2.7	4.9	1.4	10.4	5.4
Chemicals (total)	8.8	10.0	11.4	8.5	8.0	6.6	4.4	6.8	1.4	15.6	11.1
Pharmaceuticals	22.2	23.7	20.3	38.2	27.5	15.8	14.2	15.9	3.8	39.0	33.3
Metal products, machinery and equip. (total)	11.1	13.4	10.9	11.1	12.1	9.8	5.6	8.0	3.4	17.7	8.0
ODP equipment	29.6	49.5	24.4	13.2	11.3	17.6	12.3	44.3	4.6	65.5	5.9
Audio-visual and telecom	17.1	15.0	15.4	35.9	34.2	14.8	25.3	7.6	13.0	67.4	13.9
Vehicles	12.2	16.5	10.0	4.6	12.6	13.6	10.9	17.0	2.1	19.1	9.7
Aircraft and space	34.1	36.1	16.9	0.5	37.6	43.4	39.1	12.5	39.8	52.0	22.1
Scientific equipment	16.2	21.0	18.3	13.3	4.4	4.2	1.3	3.9	6.8	24.9	3.7

Source: OECD, *Science, Technology and Industry Outlook 1998*, supplementary table 4.13, Paris 1998.

^a1994.

^b1995.

In 1995 the nominal R&D expenditure in GDP accounted for 1.2 per cent in the Czech Republic, 0.8 per cent in Hungary and 0.7 per cent in Poland. These results should be compared with much higher indicators computed for EU and the whole OECD and estimated at 1.9 per cent and 2.2 per cent respectively. Consequently, the cumulative value of gross domestic R&D expenditure of the three countries stood at 0.5 per cent of the OECD total, which was scarcely equal to the corresponding share of Finland or Denmark. In terms of purchasing power parity publicly financed R&D outlays in 1995 reached substantially better levels of US\$364 million in the Czech Republic, US\$268 million in Hungary and US\$1.023 million in Poland, compared with US\$141 billion for the OECD as a whole.⁴⁹

In most highly industrialized countries, a prevailing part of R&D expenditure is financed by the corporate sector. The leading role of enterprises in financing science and technology ensures greater efficiency of such spending, by making it better adjusted to competitive strategies and specific output profiles of individual firms. Measured in purchasing power parity the total volume of such outlays in OECD reached in 1995 US\$275 billion as against US\$141 billion for government R&D spending in the same year. In transition economies public spending still dominates in science and technology, but the trend is gradually changing. Available data

⁴⁸OECD, *Science, Technology and Industry Outlook 1998*, supplementary table 4.13, Paris 1998.

⁴⁹Ibid., supplementary tables 4.2; 4.5; 4.6, Paris 1998.

for the three OECD countries from the region show that in 1995 enterprises in the Czech Republic and Poland spent for R&D US\$734 million and US\$612 million respectively, which was more than 60 per cent of the total in both cases. In Hungary the contribution of the corporate sector (US\$219 million) was about equal to that of the budget.⁵⁰

The end of the cold war has caused major changes in the structure and sourcing of expenditures for R&D. According to assessments from the United States, military expenditure as a percentage of total government budget appropriations and outlays had been reduced in OECD countries from 12.5 per cent in 1985 to 8 per cent in 1995 and in the United States from 25.7 per cent to 17.4 per cent.⁵¹ The global effects of this reduction have been greatly enhanced by a dramatic decline in military spending in the Russian Federation and in other countries of the former Warsaw Pact, from an estimated US\$448 billion in 1985 to US\$96 billion in 1995 (in real terms at constant 1995 prices).⁵² This evolution has had a number of important implications for potential shifts in global R&D efforts and industrial competitiveness. The role of governments in determination of major orientations in technological evolution is being greatly reduced. This tends to diminish the leverage that governments may have in industrial policies-at-large. The development of civilian technologies which, until recently, was to a significant degree a spill-over from the military sector, has now become much more autonomous and determined by general factors and criteria of international competition. Enormous financial resources saved by cuts in military spending may be spread out more evenly among various sectors to improve their competitive ability through a greater infusion of sector-specific R&D. This is particularly true for the Russian Federation and other countries of the region where civilian industries are likely to be upgraded substantially in medium term, due to their improved access to R&D funding.

The intense competition in technological potential has produced a remarkably fast technical obsolescence of manufactures in the markets of leading OECD countries. For example, the share of totally new or substantially modified products entering sales each year may be as high as 50-60 per cent for machinery and equipment and about 50 per cent for precision instruments.⁵³ This stands in stark contrast to the corresponding indicators in CEE. In the mid-1990s, new or substantially modernized industrial products produced and marketed in Poland averaged only about 5.4 per cent of the total manufacturing output, although for electrical engineering this indicator stood at a much higher level of around 16 per cent. Only in the automotive sector, where the infusion of foreign capital and know-how has been remarkably high, has the figure reached a respectable level of about 32 per cent.⁵⁴ Under such circumstances, the average life cycle of marketed industrial products in Poland comes to 15 years compared to about 4 years in the EU. This situation is probably broadly representative for the region as a whole.

In virtually all CEEs and CIS countries, manufacturing under Western licences has helped to bridge somewhat the technology gap in certain product areas, such as automotive industry, household products, electronics and data processing. However, the importance of this factor should not be overestimated. Generally, licensed products account for just a few per cent of the whole manufacturing output and well below 10 per cent of industrial exports.

⁵⁰*Ibid.*, supplementary table 4.11, Paris 1998.

⁵¹United States Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers 1996*, Washington 1997.

⁵²Stockholm International Peace Research Institute, *SIPRI Yearbook 1997*, Stockholm June 1997.

⁵³European Commission, *First Results of the Community Innovation Survey*, Brussels 1994.

⁵⁴Data provided by the Polish Statistical Office.

One of the central political issues and major sources of concern, particularly for new entrepreneurs in transition economies, is the impact of the foreign sector on the general condition and development prospects of domestic industries. There is no doubt that a substantial presence of foreign investors is absolutely indispensable for a successful systemic and industrial transformation in view of severe shortage of indigenous capital. However, potential risks associated with conflicts between domestic and foreign interests should also be considered as a real factor in formulation of national policies towards a global environment. In particular, redeployment and development of potentially promising industries in transition economies may be increasingly affected by dynamic growth of foreign participation in banking and financial sectors of those countries. In some cases such presence has already become dominant. In Poland, for example, foreign control is estimated to have reached 57 per cent of total assets and 73 per cent of equity of the fifteen largest commercial banks. This indicator may still go up following ongoing privatization's and mergers.⁵⁵ Hungary is reported to share a similar experience. To compare, none of the top ten banks in major member States of the European Union has lost control to foreign strategic investors. Internationally active banks tend to centralize their credit policy and take a global view of their interests. They generally regard transition economies as relatively high risk. Consequently, foreign-controlled banks may be insufficiently motivated to finance certain local industries, particularly those which require long-term restructuring or those that compete directly in local or external markets against foreign entities belonging to a global network in which such banks have important stakes. The problem is not confined to the financial sector. In 1998 as much as 46 per cent of total net profits of the largest 100 firms registered in Poland were under control of strategic foreign investors.⁵⁶

As stated in the opening paragraphs of the paper only about a third of industrial mergers and acquisitions (M&A) presently registered in the CEE/NIS region and involving Western capital belong to the category of exclusive or majority M&A. This proportion is a reverse of the trend prevailing among OECD countries. This may imply a "piecemeal" approach to acquisition of individual segments of large state-owned entities, where relatively more efficient operations find a new owner, while the government remains saddled with a less attractive part of the enterprise. Such situations may obviously complicate future restructuring and exacerbate adverse social effects of industrial reform.

Serious concerns are being voiced in several CEE and NIS countries regarding further erosion of national identity of industrial enterprises and products originating there. It is true that such misgivings are not unique to transition economies and that globalization of industry does not necessarily imply loss of national identity by globally operating entities. Most of multinational corporations have preserved such identity as regards national origin of top personnel, domestic location of a substantial part of manufacturing potential, or the sourcing of most of value added. This, however, is not necessarily true in the CEE and NIS region where privatization and acquisition may further reduce the number of relatively few native brand names that have earned international reputation in recent decades. Similarly, foreign managers who take a global look of local enterprises may give insufficient attention to sensitivities concerning national characteristics of the entities, which they own and operate. With the passage of time such sensitivities are likely to dissipate, but in the short run they may adversely affect social acceptance of the transformation.

⁵⁵*Puls Biznesu*, 19 November 1999. Warsaw.

⁵⁶*Ibid.*

6.4 Industrial restructuring

It is important that sectoral industrial restructuring programmes undertaken in transition economies within the concept of globalization should be planned over a considerable length of time, and implemented consistently throughout their entire duration. It is necessary to make them comprehensive, by addressing not only the sector concerned, but also the systemic, regional and social environment in which it operates.

A good example of benefits to be derived from this complex approach relates to the restructuring of the textile and apparel industry in the European Union. Major policy lines related to the sector were developed in early 1970s and contained in a 20-year action plan. For this purpose, import restraints and public assistance to the industry (over 500 million ecu from Structural Funds plus counterpart financing by member States and from commercial sources) were combined with increasingly tight competition rules. Today EU textiles and clothing sector enjoys relatively good international competitive position, even though it still remains a declining industry.⁵⁷ This example deserves close attention of transition economies in the region.

All transition economies have had their share of negative experience with problem sectors, where structural and operational deficiencies include, but are not limited to:

- Persistent imbalances between supply and insufficient demand.
- Obsolete fixed capital stock and generally poor technical conditions.
- Weak and deteriorating competitive position.
- Severe financial constraints.
- High volume of redundant labour resources which are engaged in such sectors and which are difficult to relocate to alternative employment.

All these areas require long-term restructuring with necessary involvement of huge public and private expenditure. Such treatment seems to be justified by several factors: the traditional importance of these industries for national economies of most countries of the region, their high share in state aid disbursement and the difficulties in adjusting the sectors to trends and conditions in the global market. At this juncture it is pertinent to add that technological changes in the world's industries have reduced benefits of economy of scale in such sectors as steel or textiles and clothing. Therefore the relatively high participation of such sectors in the overall industrial potential in transition economies, and the large size of individual industrial units, do not necessarily imply proportional comparative advantage in terms of cost efficiency, given the present state of those industries. Similarly, competitive function of relatively low wage rates is largely offset by inadequate productivity levels compared to more advanced economies.

Fortunately, there are encouraging signs that most of the economies of the region have turned the corner. This conclusion rests on such developments as: generally sound macroeconomic policies; growing propensity to save and invest; massive expansion of the private sector; development of indigenous managerial skills; substantial improvement in productivity and quality and technological progress.

⁵⁷See: DG XV of the European Commission, *The Single Market Review Series*.

Globally oriented industrial restructuring in CEEs and CIS may benefit from relatively high level of general and professional education in virtually all transition economies. This factor has been instrumental in supporting innovative and adaptive skills generally present in those countries. But here again, the benefits that can be derived from this particular endowment in the globalization game depend to a large extent on the speed of transition to a market economy. Only when this process develops sufficiently rapidly, the demand for new skills grows at a rate that promises attractive returns on investment in the acquisition of such qualifications.

7

Conclusions and recommendations

One of the major features that distinguish the present transition from previous major economic upheavals in contemporary economic history, is a large scale of resource shifts required to obtain a "critical mass" of change and a proper momentum of reforms. Whereas in other turning points of industrial evolution in the past the prevailing tendency was to build up on the existing stock of assets, the present transformation requires that a substantial part of the existing capacities be re-located, restructured or permanently withdrawn from productive use. A dramatic downfall of industrial output in all transformation economies, particularly during the early and most critical stage of transformation, bears testimony to this process. This situation confronts governments and business communities with a number of difficult policy choices and no universal panacea in terms of practical solutions.

These changes, however, coming as they are in a particular period of accelerated globalization of national economies, offer a unique opportunity for transition economies to make a fresh start and become more closely integrated into the mainstream of global industrial activities.

Consequently, globalization has become one of the key determinants of the transformation process. It exposes reforming economies to risks related to enhanced competition, but it also helps to sustain and consolidate transformation through a broad-based interaction with international markets for trade and investment and through closer involvement into a multilateral regulatory framework. The principal benefits—but also major challenges—are offered by such manifestations of globalization as more active trading relationships, improved participation in capital inflows for privatization and green-field investment, enhanced availability of good management and production practice.

Countries of the CEE/NIS region are still, and for a long time will remain, relatively marginal players in the globalization game, even though their position in some of the most essential trends has been improving since the start of transformation a decade ago.

Out of the many factors, which may influence the depth and speed of globalization for individual transformation countries, the most important is perhaps the quality of economic reform. Such quality is, in turn, determined principally by consistency and comprehensiveness of economic and structural policy measures.

Benefits to be derived by transition economies from globalization depend largely on the strength of manufacturing industries. The nadir of transformation-related contraction in industrial output has been or is about to be passed in nearly all countries of the CEE/NIS region. The speed of the recovery, however, is not the most important consideration. As a scholar has rightly remarked, "today it is *capability* rather than *capacity* that matters".⁵⁸ Priority attention of governments and

⁵⁸Sanjaya Lall, *Strategic Vision and Industrial Policies for the New Millenium*, a UNIDO paper, 1999.

business communities alike must therefore go to broadly defined structural and institutional improvements. The latter should aim at increasing cost efficiency, quality and technological skills of the manufacturing sectors and making them more export-oriented. Only then will the absorptive base for new technology be sufficiently broad. Such policy directions require active participation of public authorities in formulation and implementation of objectives and modalities of industrial strategies. Proportions between horizontal and sector-specific measures may vary from country to country, but the actual choice should result from local conditions and pragmatic considerations rather than from a doctrine or bias.

In order to enhance convergence with the prevailing global trends, transition economies should base their industrial strategies on a policy package which includes: effective state divestiture; equitable application of fair competition; open, liberal and rule-based trade policy framework; proper institutional infrastructure (exchange and securities markets, liberal foreign exchange regime, workable banking system, enforcement of mandatory technical regulations, etc) and an attractive environment for foreign investment.

Social support, necessary for an effective transformation, is co-determined by governments' positive response to legitimate aspirations of their own national business community for participation in economic benefits of the process. Therefore it is necessary to recognize sensitivities and concerns related to "national interests" especially as regards foreign acquisitions and trade matters. Trade and investment liberalization, notwithstanding all their benefits, can also carry negative distributional consequences. The key challenge for public authorities is to secure overall net gains from such liberalization. A more forward looking approach is also needed to the present pattern of intra-industry production arrangements under which the role of suppliers from transition countries is essentially limited to contract manufacturing for major multinationals (often without identification of national origin of the product). It may be useful to recall at this stage some very pertinent comments made at the UNIDO Forum late last year about the increasing power of global buyers relative to sellers.⁵⁹ More intensive efforts on the part of industries in transition economies are therefore needed to develop their own international marketing skills and facilities and/or strengthen their position within the existing intra-industry arrangements.

Practical solutions to all these and other considerations should be sought on the basis of acceptance of, and commitment to international accepted standards of fair competition and non-discrimination. In particular, there seems to exist a strong case for reductions and alignments in national industrial tariff structures of transition economies and for dismantling non-tariff trade barriers and the remaining export subsidy schemes. More active trading and investment relationship among transition economies of the region would not only enhance their chances in the context of globalization, but would also diminish the risks of disruptions during successive stages of European economic integration.

To sustain the emerging global orientations in transition countries, governments need to cooperate among themselves across a wide range of issues, including exchange of experience and advance information on macroeconomic management of the transition process and on its microeconomic implications. In view of factor dislocations caused by new industrial policies, governments should also improve their ability to fulfil public policy obligations to alleviate social costs of restructuring.

⁵⁹See: Hubert Schmitz, Institute of Development Studies, Sussex University, *Local Upgrading and Competition in Global Markets*, paper presented at the UNIDO Industrial Development Forum, Vienna, 1999.

Globalization which is becoming one of the key determinants of transformation needs to be seen as a driving force for improving the quality of economic reforms triggered by the a collapse of centrally planned economies. As such it provides the new challenges for the economies in transition. These challenges become opportunities for possible intervention by UNIDO. Although the role of international organizations is changing following the changing role of national governments in the global environment, these new opportunities require not only a close cooperation with the governments but also with the private sector. This necessitates partnership building among all partners concerned.

There is no doubt that in this process an extremely useful and catalytic role can be played by UNIDO as a neutral broker with a specific role in promoting these common goods whose further development has been attributed to international economic organizations. This role should be consistent with the needs of the countries concerned and supportive towards the phenomenon of globalization as well as correspond to those broad national and regional development needs which are in line with UNIDO's mandate.

At stake is objective and highly professional expertise available in UNIDO which may be used for mitigating transitional difficulties, accelerating economic recovery and modernization of manufacturing sector and thus optimal participation in the beneficial impact of globalization. In this respect the question of highest importance is how to design the proper scenarios for manufacturing sector development, how to establish linkages and adequately interact with other countries and markets in the region and outside the region in order to optimize national goals in the field of manufacturing development. The quality of manufacturing sector output determines the size of exports. Continuous quality improvement, upgrading of its testing, standardization, metrology base and accreditation and certification facilities have tremendous impact on manufacturing export growth. Equally important is creating a conducive environment and local capacity building to attract foreign capital required both for modernization of the technological base as well as for creating the new job opportunities. The globalization requires higher level of integration of R&D sector with the manufacturing industries, setting up of science parks, stable incentives for innovation and commercialization of local research results. A supportive role in the above areas can be played by UNIDO.

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