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# REGIONAL FORUM



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

22505

Session I

## GLOBALIZATION AND THE INTEGRATION OF INDUSTRY IN THE REGION

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Economic Transformation, Industrial  
Potential and Current Status of  
Integration of the CIS Countries:  
The Role of Science and High-technology

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

# **Economic Transformation, Industrial Potential and Current Status of Integration of the CIS Countries: The Role of Science and High-technology**

*by G. N. Egorov*

Session I

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Vienna, 2000

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## Executive summary

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The paper tries to answer a few basic questions, notably: what is the status and pace of the transformation process in the region of the Commonwealth of Independent States (CIS) virtually 10 years after the disintegration of the former Soviet Union, what are the characteristic features of the transformation process in this region; how does globalization affect countries in the region; would the scientific and technical potential of these countries facilitate their efforts to boost the development of their economic and industrial potential and allow them to become attractive partners for other countries in the world through the globalization process; and last but not least, what are the conditions and prospects of achieving a higher degree of integration within the group of CIS countries.

Chapter 2 presents major trends in the economic reforms of CIS countries. It underlines that the present economic reforms are quite unique in the history of this region as they affect the foundations of the social and economic systems established in the former Soviet Union, based on a principle of private property. The paper analyses the major directions of structural reforms and stresses that transformation varies from country to country due to specific properties of national economies and different political priorities.

Chapter 3 continues consideration of similarities and differences in reforming the CIS economies. All the countries attempt to select their own way of reform. This decides the general direction and speed of reform and the depth of disintegration of the CIS economies and, on the other side, specific national features of the transformation process. Regardless of the variety of approaches, there are clear similarities in the social and economic spheres, the character of institutional changes and market formation. The paper identifies four major stages of economic reforms. The last one, which started in 1988, is oriented towards ensuring stability in the market infrastructure and macroeconomic stabilization. The Russian financial crisis (August 1998) had a major negative impact on maintaining stability and the recovery, but its consequences in the majority of CIS countries, especially in the Russian Federation, were largely smoothed by the end of 1999, by the recovery—*inter alia*—of the industrial sector.

Chapter 4 provides a comparative analysis of the CIS industrial potential in the years 1992–1999. The bitter conclusion says that a painful transition to sovereignty of the former Soviet Union and the formation of new economic systems moved in fact all the CIS industrial development potential 15–20 years back. Reduction of shares of CIS countries in the world industrial production from 1990 to 1998 is more than twofold. The ratio of CIS to European Community shares in world gross production dropped from 1:4 to 1:10 in the last seven years. The paper underlines that the economic reform policies started to bring first positive results, though certain factors adversely affecting further positive potential development are still intact. Therefore, there is a necessity to develop a new strategy of social and economic development of CIS countries,

beginning with economic integration scenarios to allow them to become real members of the world economic system. The establishment of new economic relations in compliance with equal partnership principles is becoming the most important condition for optimal utilization of development potential in this region.

Chapter 5 speaks about the role of external factors in implementing the new national economic policy in CIS countries, highlighting the issue of openness of the national economies measured by the extent of participation in the world trade of goods, services and capital. The paper provides information on the world financial institutions' presence in the CIS countries, as well as the role of foreign capital, especially transnational corporations and joint ventures in boosting national economic growth and promoting the privatization process. The external economic policies as an integral part of national economic policy are regarded as a manifestation of sovereignty of each independent CIS country. The matter of reorientation of principal components of external economic policies from the CIS common market to world markets has become a strategic goal of countries in the CIS region. To this end, each country is undertaking a number of measures to regulate external trade, banking operations and foreign capital influx. The limited influx of foreign capital is however restrained by the underdevelopment of these countries, high risks, an inadequate investment climate and the absence of business information infrastructure.

Chapter 6 points out that the scientific potential of CIS countries is in a critical state, thus its role in fuelling economic growth through providing high-technologically designed products is declining. The volume of R&D activities, especially in the high-technology defence complex, has recorded a nearly fivefold reduction. The whole scientific complex is affected by declining State budgetary support for fundamental research as well as applied sciences, high-technology, new materials and prototype products. Many specialists engaged in R&D left this sector. In the Russian Federation, up to 80 per cent of engineering enterprises have changed their production profile, causing a sharp decrease of the engineering production share in total production volume from 17.5 per cent in 1991 to 4-5 per cent in 1997. The major problem is to find out the new sources of R&D financing. One of the options considered is a combination of state budget financing with commercial financing. Another problem discussed is the absence of effective integration mechanisms in CIS countries. To this end, a comprehensive programme of long-term cooperation among CIS countries needs to be developed in the field of science and technology that could include setting up transnational science and technology centres and strategic technological alliances in the region.

Chapter 7 concentrates on analysing the integration trends, mainly among CIS countries. The establishment of CIS was designed with a view to ensuring a painless transition from a single united state system to a system of independent national entities and to help them to establish a new type of relationship. However, in the whole period of independence, two opposite trends were observed: integration versus disintegration, caused by pro and contra factors. The latter prevails. The main obstacle for integration is associated with inadequacy in economic reforms followed by different national patterns of transformation and development. The integration, though planned as a means of jointly "entering the market" and restoring economic ties, has not yet become a real factor of overcoming the negative consequences of separation of the former Soviet Union and restoring growth of their economies. Thus the main task for CIS countries is to identify realistic spheres of possible integration.

This may include maintaining ties in high-technology industries, joint identification of niches for long-term cooperation, and inter-country specialization. In parallel to integration at CIS level, the subregional integration has been developing as well, and combines mainly countries of the southern part of the CIS region.

In the concluding remarks, the paper tries to identify certain areas for UNIDO's policy advice in the fields discussed.

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# 1 Introduction

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Social and economic transformations which took place in the 1980s-1990s in many developing countries with traditional market economies have been to a great extent aimed at deepening and extending the integration spheres, which in turn predetermine the major trend towards the world economy globalization.

After the establishment of the Commonwealth of Independent States (CIS) on the territory of the former Soviet Union, the analysis and evaluation of the current place of the CIS countries in the world economy and international integration processes became of particular interest.

The process of transformation in the CIS countries has a number of major unique features distinguishing it from the international stream. To a large extent, the nature and direction of the modern reform policy and actual activities in the former Union of Soviet Socialist Republics (USSR) were formed in the 1980s on the basis of socialist *perestroyka* ideas, and after the USSR collapse, the trend towards application of extensive world experience in developing countries reformation has become more obvious. The need for a new national State system creation and for a drastic change in the peoples' social and cultural mentality formed during the USSR period became indispensable for the economic transformation in the CIS countries. None of the countries undergoing reforms had encountered such a great number of problems before.

Each of the CIS countries, from the very beginning of sovereign existence, faced the necessity to "find its own way". This choice became a decisive factor of disintegration and strongly pronounced national peculiarities of the reformation processes in the CIS countries.

During the years of economic reforms in the CIS countries, which became independent, a unique reformation experience has been accumulated. All new independent States underwent reforms, but managed to cover unequal parts of the way. Nevertheless, the relation with the world trends of social and economic reform, common understanding and direction is obvious in the CIS countries' reforms.

At the same time, the analysis of the economic reform in the CIS countries demonstrates significant differences and peculiarities of the continuing transformations. This imparts certain unique features to the CIS countries' market reforms, which largely account for non-standard difficulties and contradictions, unreasonable duration and irregularity of the reformation processes, the consequence of their crisis. The major integration retarding mechanism, in the author's opinion, is based on the inadequate economic reform implemented in accordance with different national models.

Various national interests concerned with relations within the CIS and international relations found their expression in the national economic policy of all the CIS countries. The national factor has become self-sufficient and has started to prevail over the integration factor.

The world integration practice proves that national economies with different structures and development levels can only be integrated in case of uniformity, similarity of national economic policies, business conditions, and legislation, provided such States attach prior importance to the integration factor.

During the last one and a half to two years, the economic reforms in the CIS countries have acquired two principal peculiarities. Firstly, a trend towards active government participation in the economic processes has emerged and been enhanced in the countries, which earlier stuck to radical liberal reform models.

Secondly, economic liberalism has expanded in the countries earlier pursuing the policy of preservation of the significant deterministic role of the government in the economy and its reforming.

Due to these trends' development, conditions are established for moving away from radical-liberal and radical-conservative extremes, for a convergence of reform models, for a general turn to forming of national economic mechanisms, which are similar if not unified in fundamental features. There is a possibility to determine the real integration potential of each CIS country, with its capacities, role and place in the integration processes on subregional levels in the CIS and in the international community.

The key factor predetermining the success of market reforms implementation in the CIS countries is the industrial potential status of the reformed States. The transition from command to market methods of real sector managing was accompanied by a drastic setback in production in all the CIS countries. The industrial potential was brought down to the level it had 15-20 years ago. But the employment of market mechanisms and the development of a market infrastructure provided for considerable industrial growth in many CIS countries. The openness of the newly independent States, characterized in the first place by a liberalization of external economic relations in the CIS countries, the attraction of foreign capital and the establishment of equal possibilities for domestic and foreign investors, also contributed to such a growth.

The level of scientific potential, introduction of high-technologies and latest achievements of the international science for enhancing the competitive ability of the economy as a whole and the key branches and technologies in the CIS States are very important for the development of the real sector of the economy under market conditions.

Much attention is paid to consideration of these problems in the present work.

The subject of the analysis is the demonstration of peculiarities and unique features of the CIS countries' transition from planned centralized economy to market economy, and certainty that the world globalization trends pertain to the CIS developing countries as well, which despite very complicated and contradictory paths to an effective economy, will have to integrate through different integration processes with the uniform world economy in the future. Study of this experience is very important and vital for UNIDO.

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## 2 Major trends in the economic reforms in the CIS countries

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According to their character, economic reforms were always of an evolutionary nature. They are commonly conducted within the framework of existing social and economic systems and are aimed at their improvement.

The experience of the twentieth century economic reforms evidences that transformations in developed as well as in developing countries, irrespective of the political regimes conducting the reform, have an internal systematic nature and even the most radical do not affect the foundations of the established social and economic system. The reforms have structural direction as far as their content is concerned, and are aimed basically at holding off or overcoming of cyclical economic crises, micro- and macro-level management forms and methods changing, production-technological proportions modernization, etc.

*In the former Soviet Union and the European socialist countries the economic reforms of the 1970s-1980s by their nature, objectives and orientation can be safely classified as internal systematic ones. However, the excessive attention given to political and ideological aspects interfered with optimization of the socialist system of planned economic management.*

Economic reforms in the CIS countries after 1992 significantly differ from all the previous economic reforms, as they have immediately and extensively affected the foundations of the social and economic system, established in the former Soviet republics. Introduction of private property has broken and in fact liquidated the public nature of the property and economy management relations. Limitation and crowding out of the State from the economy as a subject of property and management have led to destruction of the economy and internal industry management mechanisms.

Disintegration processes have entailed their separation in the narrow framework of the local markets with demand not matching the potential of highly specialized industries and production-technological complexes of the republics' economy, created during the years of the Soviet Union existence. They were either subject to disintegration or low-efficiency reorientation to the third countries markets, or transferred or sold to private businesses or foreign companies.

Structural reforms differ within the CIS countries due to peculiar properties of national economies. The major directions of structural reforms, carried out in the CIS countries, are:

- Macroeconomic stabilization—stage of preparation for the national economy structural reforming. The major aspect of this direction is overcoming of the consequences of the inter-republic economic and business connections rupture and hyperinflation processes suppression. The reform nature of macroeconomic stabilization is determined by the fact that in almost all the CIS countries such stabilization is achieved through the

implementation of a new economic policy conducted, as a rule, with international financial organizations' participation and support. In the course of macroeconomic stabilization, a reformed economy adopts certain market mechanisms, forms and principles and becomes subject to the rules and regulations of the modern capitalist practice;

- Institutional reforms are interrelated with the changes in the property relations' nature. The major objective of this direction in the CIS economic reforms is the abolition of the public (State) systems and institutions of economic management and establishment of market institutions and corresponding legal business forms.

The peculiarity of the market economy infrastructure establishment is that these processes are ambiguous for different countries. The difference is not only in the content, scope and development level of the market institutions, but also in the forms, governmental role in their establishment and the level of coverage of activities of new economic structures;

- Reorganization of national economy structure reflects the progressive or regressive shifts in the production and usage of the gross domestic product (GDP), inter-industry proportions, agricultural sector, transportation, non-manufacturing services sphere, external trade structure, capital and labour movement.

Major aspects of structural reform are similar in all countries. Macroeconomic conditions, their social adaptation level, resources and manageability are different. Structural shifts in the CIS countries' economies are characterized by extensive coverage of the industrial and non-manufacturing spheres, tight time periods, as well as grave social and economic consequences.

Another peculiarity of the CIS reforms is simultaneousness and interdependence of the systemic and structural reforms, inadequacy and lack of coordination of their consistency and direction caused by the application of different models (methods) of conducting economic reforms.

As a rule, there were no economic reforms in the world practice carried out in accordance with a purely liberal or purely institutional model. However, the situation changed at the end of the 1980s, beginning of the 1990s, when abolition of the planned socialist economy was well under way. Under pressure of the International Monetary Fund (IMF), not only were market economy material values and models called for in many CIS countries, but also macroeconomic stabilization and regulation as well as monetarist mechanisms and tools.

A common feature of the economic reform in the CIS countries is that these reforms are related to the solution of strategic problems of a greater scope than just restructuring of the economic relations on the basis of market principles. These reforms in the CIS countries serve as an active means of the sovereignty confirmation, national state formation and establishment of independent internal and external economic policy.

While having similar reform objectives, each of the CIS countries chooses its own model scenarios, priorities and sequence of reforms and limits of the social price of political and economic transformations. Scenario and models differences have caused eventually lack of consistency in reform rates and economy liberalization scope and different state mechanisms for economic regulation.

With some exceptions (Turkmenistan and Uzbekistan) the CIS countries have similar differences on the principal issue—market economy regulation mechanisms and tools.

Trends towards state macroeconomic regulation formation, active state participation in institutional reforms and market infrastructure control have been enhanced in the countries where reforms were liberal model and which were monetary—“shock”—therapy-oriented (Armenia, Kyrgyzstan, Republic of Moldova, Russian Federation).

The shift to radical reforming, extension of its sphere, application of liberal values and monetary tools (basically under external pressure) become apparent in the countries where, for different reasons, trends towards gradual market reform and state presence and influence prevailed (Belarus, Kazakhstan, Ukraine).

Reforms are progressing gradually and the economy is becoming more liberal in the countries which firmly and consistently declared and really were oriented towards an evolutionary approach in market reforms, determining the role of the state, national mentality and internal forces (Turkmenistan, Uzbekistan). Stability of society and minimization of the social cost of reforming officially remain in the centre of the economic policy of these countries.

Economic reforms are distinguished by consistency, depending on the current situation, considered as a means of political consolidation and stability in the countries where exacerbation of internal political struggle did not allow to start or forced to suspend the reformation processes (Azerbaijan, Georgia, Tajikistan). Direction and pace of the reform are determined not as much by the national capital needs as by interest of strategic foreign investors and donor States.

Similarities and differences in conducting economic reforms in the CIS countries have given them a multi-pole configuration. The CIS countries have reached and will stay on different stages of economic reforms and new market mechanisms formation.

In 1995-1997 the CIS countries reform methods and directions were significantly corrected. As a result of “anti-crisis measures” employment in the CIS countries a trend towards overall stabilization and beginning of recovery processes in the real sector of the economy emerged in 1997.

The fact that under influence of similar approaches to anti-crisis tasks, rapprochement of major directions in the market reform and economic and social policy took place, which can be also attributed to the positive aspects. In almost all the CIS countries, a purpose-oriented approach to reforms implementation has been formed on the basis of indicative planning of the state mid-term programmes. Reform policy methods have also started to draw together.

## **Conclusions**

Having begun the reforms from very similar points, the CIS countries then chose their own model scenarios, priorities and the sequence of reforms' implementation.

After they managed to solve the major problems on national sovereignty ensuring and establishment of the necessary basis for transition to market relations, the prerequisites for the negative tendencies in social and economic development were created in the CIS countries.

The rapprochement of models, objectives and structural characteristics of reform activities in actual politics and legislation practice, which begins to take shape, has significant if not determinative meaning for coordination and synchronization of further reforming, formation of similar or single-type national economic mechanisms and equal conditions for international goods and services, capital and labour movement.

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# 3

## Common problems and peculiar features of reforming the CIS economies during the transition period: stages of economic reforms

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In spite of the multi-pole configuration and multi-level trajectory of economic reforms in the CIS countries, common problems and the reforms' basis still predominate. The peculiarity of reforming the new States which appeared on the former Soviet Union territory are the irreversible political and social-economic reality. By the early 1990s, the national state system had been formed in all the CIS countries. As a result of economy liberalization and introduction of new institutions in all economic spheres, basic framework of market economy has become visible, trends towards production and economic growth resumption have strengthened.

Diverse and multi-factor processes of reforming the CIS economies have evolved in parallel with common uniting and consolidating factors and numerous, various, often contradicting national, geographic, political and economic peculiarities and differences inherent in each separate country member of the Commonwealth of Independent States.

A series of principal peculiarities standing out against a background of the common international process should be noted in evaluation of the modern place of the CIS countries in the world economy and international economic processes. Firstly, the nature and specific direction of the economic reforms in the CIS countries have been formed on the basis of the socialist reformation ideas of the 1980s. Secondly, these actions were established on the basis of priority formation and strengthening in each CIS country of a separate new national state system. Thirdly, in the transition from socialism to a market economy, there has been a major change of previous public and social-cultural mentality. Fourthly, national economies which not so long ago had been a part of a unified system with common economy management centre, common territory, common production technological and organizational-economic system were subject to transformation and changes. None of the countries undergoing transformation has ever faced such a number of problems.

Each of the CIS countries from the very start of sovereign existence faced "selection of its own way". This selection determined the directions and depth of disintegration of the CIS countries' economy and differences in directions of political and economic national interests. This selection obviously resulted in national peculiarities of the reformation process.

However, with all the variety in approaches and directions of economic reform and actual policy in the CIS country, clear connection with social-economic trends of transformations, similarity in the necessity of institutional changes and strategic orientation to market relations formation are seen. Reform content, major stages and priorities are very similar.

The first stage of economic reform in the CIS countries pertains to the period of 1987-1991. Historically, the CIS countries started formation of republic (in the framework of the former USSR) economy complexes from a common start, on the same methodological base, in the same direction, in the course of evolutionary course and consistent transformations.

In 1987-1988 liberalization of the enterprises business activities started. New terms of labor remuneration in manufacturing and other industries were introduced, non-fixed and contractual prices became available, the all-Union act on enterprises was passed. On the basis of the cooperative movement and state property rent practice, in fact, the first step was made to the private proprietorship and privatization of the state property. 1990-1991 brought liberalization and commercialization of the state economic activities. After special external trade organizations and some enterprises received the rights of export-import transactions licensing, liberalization of external economic activity started. The first commercial banks, commodity exchanges and trade intermediary firms emerged. In fact, all this formed the foundation of market infrastructure formation.

The peculiarity of the second stage of reforms (1992-1994) is that the reforms continued in the new CIS countries in a new way set by the latest programme, adopted by the majority of the CIS countries. It foresaw that the reforms should be conducted simultaneously, fully and promptly in all major directions. The major reform directions are economic stabilization, privatization, prices and economy liberalization. The Russian scenario of "shock" liberalization was voluntarily or involuntarily adopted in many new independent countries of the CIS.

This period became a stage of economic transition national policy formation for the majority of the CIS countries. Governments of Belarus, Kazakhstan, Turkmenistan, Ukraine and Uzbekistan concentrated their efforts on the establishment of national state institutes and political and economic management structures, development of economic reforms legislation base, search of approaches for solution of problems of reform of the manufacturing industries structure and preparing of conditions for crisis recovery. These countries basically rejected standard programmes of IMF. Major directions of governmental programmes of these CIS countries involved application of state regulation mechanisms, enterprises restructuring, social guarantees and population support. Kyrgyzstan and the Republic of Moldova, having selected a principally different way, were guided by IMF regulations from the very beginning.

This period—the initial stage of economic reform and a period of crisis development—forced decisions and actions taken in accordance with obligations to IMF for most of the central Asian CIS countries, where real national models of social and economic structure modernization had formed by 1994. The main result of this stage is the disintegration of the "ruble area" and introduction of national currencies by almost all CIS countries. Thus, newly independent States received an opportunity to develop and implement their own economic policy, based on the national State interests.

On the whole, the structural crisis of 1990-1994 in the CIS countries grew into a social and economic crisis characterized by unprecedented depth and scope evidenced by the data in table 1. Financial destabilization and avalanche-like inflation were a common consequence for all the CIS countries in the first stage of active economic reforming. Hyperinflation especially struck Kazakhstan (20 times), Tajikistan (22 times), Belarus (23 times), the Russian Federation (26 times in 1992) and Turkmenistan (28 times).



**Table 1. Rate of growth, decrease of major macroeconomic indicators' averages in the CIS in 1992-1994**

*(As percentage of the previous year in constant prices)*

	1992	1993	1994	1994 as % to 1991
Gross domestic product	-14.0	-10.0	-14.0	-33.0
Gross volume of industrial product	-18.0	-12.0	-23.0	-44.0
Gross agricultural product (all types of farms)	-7.0	-2.0	-14.0	-22.0
Fixed assets investment (all financing sources)	-39.0	-10.0	-23.0	-58.0
Consumer prices index, times	13.9	15.8	7.5	1 640
Retail turnover (all retail outlets)	-14.0	-6.0	-4.0	-22.0
Export	-	6.0	14.0	21.0
Import	-	-8.0	9.0	0.1

Source: Committee on Statistics of the CIS, 1995.

Crisis escalation in the real sector of the national economies of the CIS countries resulted in reduction or significant retarding of the market reforms in many CIS countries. Reduction of state control in the economy and privatization was basically stopped in Belarus, the Republic of Moldova and in the Ukraine. In Armenia, Azerbaijan and Georgia, partial privatization took place. Processes in central Asian CIS countries were quite similar to them. "Voucher" privatization was fully rejected in Uzbekistan and was not completed in Kazakhstan and Kyrgyzstan. In all CIS countries (except the Russian Federation), the state retained administrative or financial control over the majority of the enterprises.

As a result, the CIS countries have reached and stayed at different trajectories of economic reforms and of market economic mechanisms formation. This circumstance has become the decisive factor of economic disintegration of the CIS countries, the major obstacle on the way to their agreed multilateral collaboration. The CIS countries have disagreed on the main criteria of a market economy, e.g. the liberalization level.

The third stage of transformations (1995-1997) is characterized by forced correction of the reform course, a "change of milestones". Under the threat of the financial destabilization deepening and crisis escalation in the real sector of the economy in all CIS countries, the strategy of "breakthrough to the market" was replaced by an "anticipating strategy". Programme measures were replaced by anti-crisis activities in the sphere of production and in the financial sphere.

At this stage, the major efforts of the majority of the CIS countries' governments were concentrated either on adjustment of national economies to the fall-apart of previous inter-republic connections and independent breakthrough to the world markets (Azerbaijan, Kazakhstan, Turkmenistan, Kyrgyzstan, Uzbekistan), or on the development and implementation of financial stabilization policy either agreed with international financial organizations or based on the models proposed by these organizations with implementation of regulatory market mechanisms and institutions (Armenia, Kyrgyzstan, Republic of Moldova, Russian Federation, Ukraine).

These differences resulted in streams of different speed in the common flow of similar macroeconomic trends. In spite of it, trends of general stabilization and start of recovery processes in the real sector of the economy emerged, which is confirmed by table 2 data.

**Table 2. Rate of growth, decrease of major macroeconomic indicators' on average in the CIS in 1995-1997**

*(As percentage of the previous year in constant prices)*

	1995	1996	1997
Gross national product	-5.0	-3.0	1.0
Gross volume of industrial product	-6.0	-4.0	3.0
Gross agricultural product (all types of farms)	-7.0	-5.0	1.0
Fixed assets investment (all financing sources)	-14.0	-17.0	-3.0
Consumer prices index, times	3.5	1.5	1.2
Retail turnover (all retail outlets)	-8.0	-1.0	6.0
Export	23.0	11.0	-0.2
Import	26.0	8.0	10.0

Source: Committee on Statistics of the CIS, 1997.

Rapprochement of major directions of market reforms and economic and social policy became visible, influenced by similar approaches to anti-crisis measures and problems. State indicative-forecasting plans or programmes became the most widely used transformation tool in almost all CIS countries. Reformation policy methods converged as well. Countries were oriented to radical liberal-monetary instruments and mechanisms and increased application of state regulation mechanisms. And vice versa, national economies' liberalization and the "openness" trend were enhanced in the countries adopting an evolutionary-conservative path based on the "State governing role".

In 1998, the fourth stage of economic reform in the CIS countries started. It is characterized by general orientation to ensuring stability of the established foundations of the market infrastructure on the basis of growing trends in macro-economic stabilization, certain results in structural reform of the real sector of the economy, reform of the institutional structure of the market economy and in the social sphere. However, these results were almost totally blocked by the crisis of 17 August 1998, which catalysed a new stage of the reforms crisis, left a global and negative imprint on all the market reforms in the CIS countries, and moved the Russian Federation at least several years back.

Nevertheless, consequences of the crisis in the majority of the CIS countries had been significantly smoothed by the end of 1999, and in the Russian Federation, due to significant growth of industries (approximately 8 per cent for 10 months of 1999), due to increase of production, first in the import-substituting industries of the economy, and also due to the long-expected rise in crude oil prices starting from the end of 1999, a shift to recovery of the real sector of the economy started to take place.

## Conclusions

Despite the similarity of the reform objectives and of the stages of economic reforms, in each CIS country the process of reforming was characterized by various national, political, geographical and economic peculiarities and differences. Each of the CIS countries made its choice on the basis of its understanding and evaluation of possibilities of the national economy and interests of major social groups of the population and national elites, reasonableness of hopes for external financial and technical assistance and potentially risky political, social and economic destabilization, unavoidable in any reform process.

A difference in models and scenarios have eventually resulted in uneven rates of reform, scopes of economic liberalization and state mechanisms for economic regulation.

Despite all this and all the differences and peculiarities, market mechanisms and institutional creation strengthened the tendencies towards production increase and beginning of some economic growth, in spite of the dramatic decrease in industrial potential of the CIS countries during the first years of reforms.

# 4

## Analysis of the CIS countries industrial potential in 1992-1999

Transition to a market economy, the directions and stages, general features and peculiarities of which were considered in chapter 3, above, was accompanied by a deep crisis in the real sector of economy in all the CIS countries.

Political and economic reform in the former Soviet States allowed to include them in the system of international economic relations, which is formed to a great extent under the deterministic and direct influence of the largest developed countries of the world. A painful transition to sovereignty of the former Soviet republics and the formation of new economic systems in fact moved all the CIS countries' industrial development potential 15-20 years back. Thus, for example, the volume of GDP produced in 1998 in Uzbekistan was at the same level as at the end of the 1980s, in Belarus and Kazakhstan—at the level of the mid-1980s, Kyrgyzstan—the early 1980s, the Russian Federation, the Ukraine, and Armenia—at the level of the end of the 1970s, Tajikistan—the early 1970s, in Georgia—end of the 1960s, Azerbaijan and the Republic of Moldova—the mid-1960s.

Data on the depth of economic crisis, related to transition of the CIS countries from planned to market economy, is presented in table 3.

The reduction of GDP in the 1990s was so great that the majority of the CIS countries would not be able to reach in the nearest future the levels of the 1988-1990 period of maximum GDP volume. A number of tables and figures show the exact place of the CIS as a whole and each particular CIS State in the international economic system.

**Table 3. Rate of growth, decrease of GDP of the CIS countries**  
(In adjusted prices)

Countries	Year of production peak	Maximum reduction rate		Maximum growth rate		Depth of crisis	
		Year	As % to the preceding year	Year	As % to the preceding year	1998 as % to the year of peak production	Year of volume of production equal to 1998
Azerbaijan	1988	1993	-23	1998	10	-61	1966
Armenia	1989	1992	-42	1998	7	-42	1977
Belarus	1989	1994	-13	1997	10	-22	1985
Georgia	1988	1992	-45	1997	11	-70	1969
Kazakhstan	1990	1994	-13	1997	2	-39	1983
Kyrgyzstan	1990	1994	-20	1997	10	-39	1982
Republic of Moldova	1989	1994	-31	1997	1	-67	1965
Russian Federation	1989	1992	-14	1997	1	-44	1979
Tajikistan	1988	1994	-25	1998	5	-67	1970
Turkmenistan	—	—	—	—	—	—	—
Uzbekistan	1990	1992	-11	1997	5	-9	1988
Ukraine	1989	1994	-23	1998	-2	-59	1977

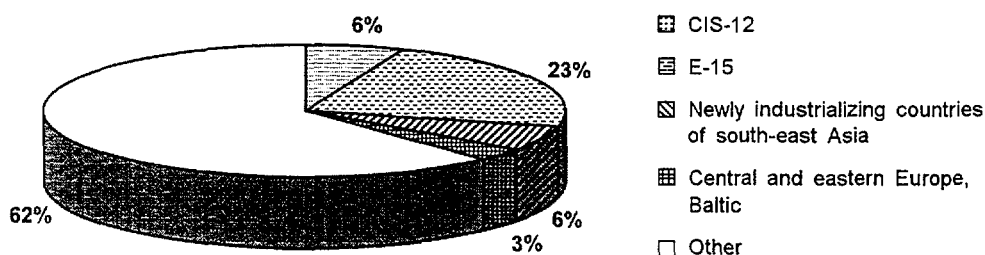
Source: Committee on Statistics of the CIS data, 1998.

Figures I and II present data on shares of the CIS countries in world gross product in 1990 and 1997. Reduction of shares of the CIS countries in world industrial production from 1990 to 1997 is more than twofold. Rate of change of indices of the major economic indicators on average for the CIS countries pertaining to GDP, fixed assets investment etc. for the period 1991-1998 is presented in figure III. In figure IV, the comparative data on rates of growth (reduction) of industrial production of the CIS countries in 1997 relative to 1990 in relation to the major country groups of the world is presented. As it appears from the data presented on a regional basis, the CIS group yields to the newly industrializing countries of south-east Asia (NIC SEA) and the group of eastern-European countries. The relation significantly changed with the European Community (EC) countries. If, on the eve of reform, the CIS and EC share in the world gross product ratio was 1:4, in 7 years it turned into 1:10.

The CIS countries have lost their leading positions in their regions according to the economic development criteria. The Russian Federation, Ukraine and Belarus outperformed Poland and Romania during the reform period measured by the key indicator and equalled 1/3 of the German indicator. In Armenia, Azerbaijan and Georgia, the level of economic development was much higher than in Turkey and the Islamic Republic of Iran. Central Asian republics had a higher level than China and Pakistan, and were close to the level of Turkey and the Islamic Republic of Iran. Now the situation is quite different. The level of economic development of the Russian Federation and Belarus is comparable with Romania. Kazakhstan is close to Pakistan, and Uzbekistan's indicators are also approaching those of Pakistan.

**Figure I. Share of the CIS countries in world gross product in 1990**

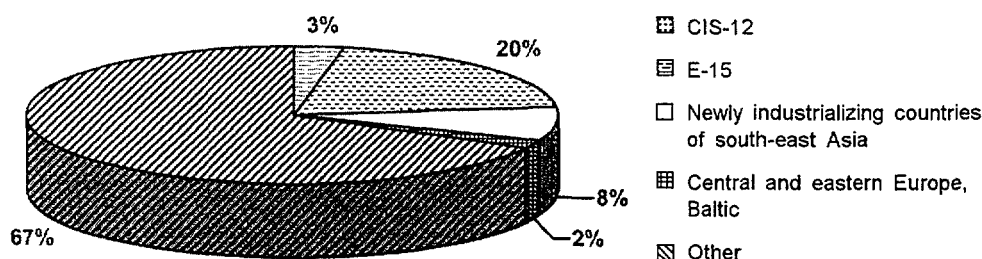
(As percentage for prices and currency purchasing parity in 1993)



Source: Economic Union IEC, Analytical Report 1999.

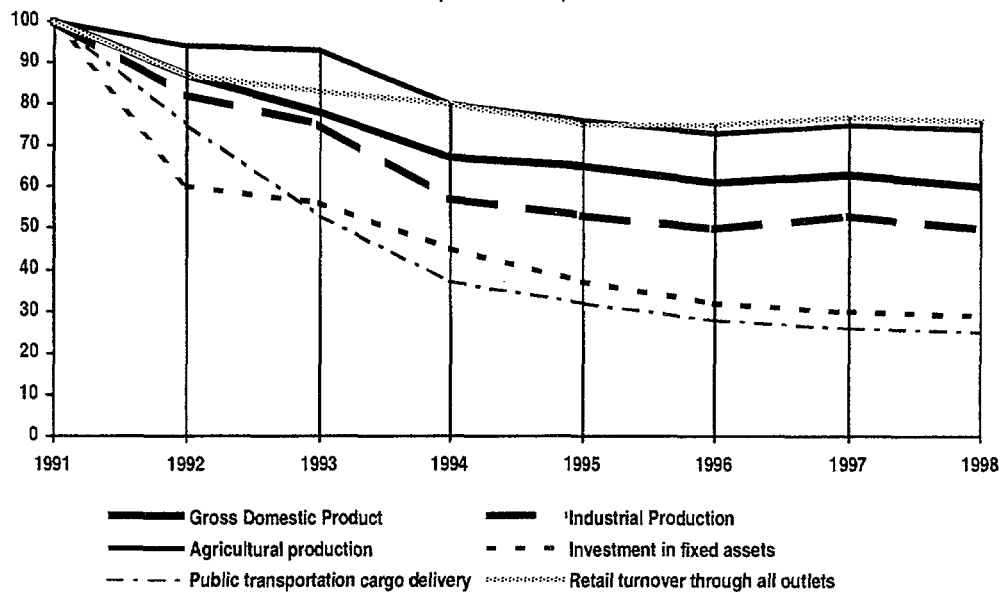
**Figure II. Share of the CIS countries in world gross product in 1997**

(As percentage for prices and currency purchasing parity in 1993)



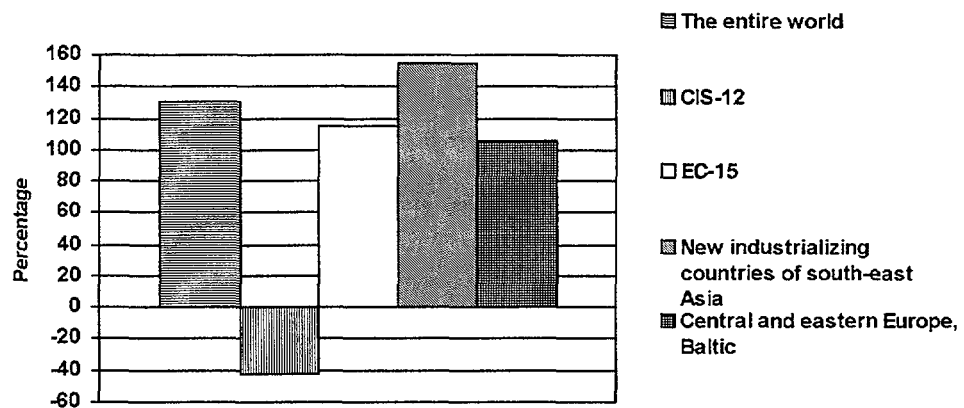
Source: Economic Union IEC, Analytical Report 1999.

**Figure III. Major economic indicators' indices averages for the CIS countries (1991-1998)**



Source: Committee on Statistics of the CIS brief guide, "The CIS in 1998".

**Figure IV. GDP growth (reduction) rate in 1997 as compared to 1990**



Source: Economic Union IEC, *Analytical Report 1999*.

However, by 1997, the economic performance of the majority of the CIS countries started to change for the better. The economic reform policy started to bring first positive results. In 1996-1997, indications of economic stabilization and some growth appeared. Overall, by that time, firms and households, to a large extent, had adapted to conditions of market relations. Gradually, inflationary expectations of suppliers and customers decreased, basically as the result of strict financial policy. This in turn had a favorable impact on reduction of the inflation rate and improvement of the investment climate.

At the same time, factors adversely affecting further positive potential development are still intact. The complicated financial situation of the real sector enterprises and the continuing increase in mutual payment defaults and barter transactions volume have affected the formation of the budget incomes of almost all CIS countries.

Performance in 1997-1999 clearly highlighted the necessity of establishment and implementation of a new strategy of social and economic development of the CIS countries, beginning with their economic integration and their becoming members of the world economic system.

The financial crisis of 1998 confirmed the view of still intact inter-augmentability and interdependence of the national economies of the CIS countries, which, in its turn, causes the necessity of coordinated activities of the countries in weakening adverse trends of social and economic development.

The most significant crisis demonstration has involved the abrupt ruble exchange rate decline, the sudden rise in the prices of imported goods and spare parts, holding off investment programmes and projects and the bankruptcy of commercial banks. All this worsened the financial standing of industrial enterprises and deprived them of financial sources for production start-up. This resulted in the further decrease of output demand, which entailed an abrupt decline of production in the second half of 1998.

An analysis of the financial crisis in the CIS countries showed that, to the largest extent, not only did those countries which had tight economic connections with the Russian Federation suffer, but also those that had internal problems identical to the Russian ones.

Despite a number of adverse factors negatively affecting the economic development of the CIS countries, starting from the second quarter of 1999, some positive developments, still intact, took place in some of the real sector industries. Industrial production on average in the CIS countries increased 5.4 per cent for the 9 months of 1999. Eight of the CIS countries showed an increase of industrial production as compared to the corresponding indicator for 1998 (table 4). As it appears from table 4, the most significant production growth for 9 months of 1999 took place in Armenia, Belarus, and the Russian Federation, somewhat lower in Tajikistan and Uzbekistan. In the Russian Federation, the 1998 level of production was exceeded by all the production industries. The highest growth rates were demonstrated in the microbiological industry (34.6 per cent), chemicals and oil chemistry (20.3 per cent), lumber and lumber-processing (14.5 per cent), machine-building and metal-processing (13.1 per cent).

**Table 4. Producer product output in 1999**  
(as percentage to the corresponding period of 1999 in fixed prices)

	<i>First quarter</i>	<i>Second quarter</i>	<i>Third quarter</i>
Azerbaijan	104.1	102.0	102.8
Armenia	95.6	102.8	107.6
Belarus	104.1	107.0	107.6
Georgia	94.3	100.6	101.7
Kazakhstan	95.9	95.9	100.0
Kyrgyzstan	95.4	90.0	95.4
Republic of Moldova	72.9	74.8	87.2
Russian Federation	98.0	103.1	107.0
Tajikistan	104.4	108.0	106.8
Turkmenistan	...	...	...
Uzbekistan	104.7	105.6	105.9
Ukraine	97.6	100.2	102.3

*Source:* Ministry of the Commonwealth Affairs, analytical information on the social and economic situation in the CIS countries for the 9-month period of 1999.

As compared to the beginning of 1999, producer processes stabilized in the Ukraine, Georgia and Kazakhstan. In line therewith, in the course of the last year, subdued production trends continued in the Republic of Moldova (12.8 per cent) and Kyrgyzstan (4.6 per cent).

The reform of the economy in the CIS countries is conducted in conditions of low investment activity which slows down the rates of renewal of fixed assets in the producer product sphere and worsens the situation with development of

the social sphere objects. An analysis of changes in the production structure of many of the CIS countries demonstrates positive trends in recent years. A reduction or stabilization in the share of raw fuel materials is seen in the majority of the CIS countries. The weight of the fuel industries in the total volume of the CIS producer production decreased, and the ferrous and non-ferrous metallurgy share stabilized. There has been a positive shift in the direction of a certain increase in the total volume of industrial production in the CIS, in the share machine-building and construction materials, and share stabilization in chemicals and oil chemistry and in the textile and foods industry. The State share in the total production volume in the CIS as well as in production industries significantly decreased during the past years.

## **Conclusions**

An analysis of the industrial development results of the CIS countries in 1992-1999 shows that certain positive aspects of the CIS countries' economic development are still not based on a solid foundation that will result in their irreversibility. Macroeconomic stabilization, to a certain extent, was reached in many countries due to external loans and foreign investments.

Issues of cooperation in integration processes are a very important component of economic and industrial development of the CIS countries in the current situation. The establishment of new economic relations in compliance with equal partnership principles, reaching a new level, is one of the most important conditions of mutually beneficial collaboration in the potential development of production technology in the CIS countries.



# 5

## The role of external factors in national economic policy implementation in CIS countries

When we speak about the role of external factors in implementing the new national economic policy in CIS countries, the first thing to mention is the openness of the national economies, which is mainly characterized by the extent of participation of this or that country in the world turnover of goods, services and capital, and is, as a rule, a result of expansion and liberalization of both external economic spheres and internal markets of separate countries.

Greater openness of the economies of developing countries in nearly all the regions of the world affects the structural processes in world trade. The export of the CIS countries has grown by nearly 2.5 times during the last decade, but their total world share has not changed. Disintegration factors are more active here, possibilities for expanding mutual preparation are not used, and the desire to enter the world markets and find profitable niches independently prevails. Table 5 contains the data on the shares of CIS countries in world exports.

An important role in raising the level of openness of the national economies belongs to the World Trade Organization (WTO), which is quickly turning into a well-shaped and strict international regulation structure of trade and economic relations. Of the CIS countries, Kyrgyzstan joined WTO in 1998. The Russian Federation is expected to join in 2001-2002. Six more CIS countries may be admitted to this organization in the near future—Azerbaijan, Armenia, Georgia, the Republic of Moldova, Ukraine and Uzbekistan.

Table 5. Share of CIS countries in the world exports  
(Percentage)

	1991	1996
Countries with transition economies	6.49	7.19
USSR (estimated by the authors)	2.72	2.34
CIS	2.66	2.17
Azerbaijan	0.01	0.01
Armenia	0.009	0.005
Belarus	0.05	0.09
Georgia	0.01	0.007
Kazakhstan	0.29	0.1
Kyrgyzstan	0.11	0.008
Republic of Moldova	0.03	0.014
Russian Federation	1.51	1.53
Tajikistan	0.07	0.011
Turkmenistan	0.04	0.025
Uzbekistan	0.39	0.062
Ukraine	0.14	0.3
Baltic States	0.08	0.11
Central and eastern European countries	2.00	2.18
Asian countries	1.77	2.67
China	1.70	2.56

Source: Institute of Economic Analysis, *Economic Issues*, No. 5, 1997.

The world financial market has been built and is rapidly expanding. Sixty international commercial and investment banks are operating and in fact regulating the currency rates and capital flows. The CIS countries are so far outside these activities. But institutional investors participating in the world stock market show a concrete interest in the CIS potential.

Expansion of transnational corporations and international investors to CIS countries is so far limited by their underdevelopment and high risks of the national financial markets, weak state regulation, low reliability and liquidity of securities issuers and absence of information transparency.

A solution to these problems in the CIS countries may have different consequences. On the one hand, the break-up and dilution processes in the national markets are most likely to speed up; they may become more open to foreign goods and capital, which will make them closer to the hotbeds of global and regional economic and financial crises. On the other hand, new opportunities in a wider access to international material, financial and intellectual resources are opening up to the national economies.

In 1997-1998, the formation of joint ventures with partial or prevailing foreign participation is becoming one of the priorities of institutional reforms in most CIS countries. The only difference lies in the depth of foreign capital penetration into the national economy. Turkmenistan and Uzbekistan are oriented to attracting capital on parity privileged terms into state projects related to industrial restructuring and especially upgrading industrial infrastructure. Azerbaijan gives priority to contract mechanisms of transnational corporation participation in the development of oil and gas fields without changing the national resources form of property.

Kazakhstan employs a wider range of transformation methods for the property relationship with foreign participation: trusteeship management by big foreign trade and industrial corporations and private firms of the state share in joint-stock companies with a right to redemption; direct sale of state enterprises to non-residents; purposeful privatization of key industries through an international bidding system. More than 30 privatization contracts have been concluded with foreign companies. Over 45 of the biggest enterprises have passed into their ownership, principally in mining and metallurgy. Foreign capital participation has activated privatization processes. The general specific share of private enterprises has now reached 80 per cent, with 86 per cent in industry.

In the Russian Federation, the share of foreign participants in joint ventures amounts to about one-third of all foreign investments into the fixed capital.

Foreign capital is attracted into the banking sphere very carefully and by doses. The most liberal in this regard is the legislation of Georgia, Kyrgyzstan and the Republic of Moldova, which admits foreign credit organizations to the national financial markets on preferential terms. There are no limitations for them at all in Armenia, which in fact is equal to an offshore regime, and the foreign capital share in total banking capital in 1997 was estimated at 46 per cent.

As for those CIS countries, the Governments of which have linked the economic policy to external financial aid (Armenia, Azerbaijan, Georgia, Kyrgyzstan, Republic of Moldova, Tajikistan and Turkmenistan), serious destabilizing factors have emerged. The terms of granting external financial aid—"withdrawal" of the State from the real sector of the economy, pursuing a tough policy in regard to it,

strengthening of fiscal pressure, successive cuts in budget funds for the social sphere, coverage of budget deficits principally from external and internal borrowing—did not so much weaken the inflation potential, but rather expanded the base of budget and currency instability, and drew national economies not yet strong enough into periodic destructive financial crises.

According to expert estimates, as of mid-1997, international banks, economic organizations and donor countries (without the Russian Federation) had given the CIS countries a total amount of credit of about 25 billion United States dollars. The greater part of these resources was used to support economic reforms, state budgets and national currencies and to pay for imported goods and technical aid.

A trend has recently emerged for successful reorientation of CIS external borrowings to investment financing of state programmes directed at restoring and upgrading certain industrial and technological complexes and economic sectors. Institutional foreign investors are paying greater attention to production infrastructure upgrade state projects (transportation, telecommunications and export-providing systems and the municipal economy), which offer favourable terms for the functioning of private foreign capital, or for their integration into international structures.

For a number of CIS countries, foreign investments have become the main source of financial resources for economic revival and growth. In Azerbaijan, their share in the total capital investment volume is estimated at 71 per cent, in Kyrgyzstan 63 per cent, in Georgia 57 per cent and in Turkmenistan 42 per cent. In Uzbekistan, Armenia and Kazakhstan this share fluctuates between 20 and 26 per cent. In the investment environment of the Republic of Moldova, the Russian Federation, Belarus and the Ukraine, their role is so far insignificant (11, 4, 4 and 1 per cent of the total amount of investments into the fixed capital respectively).

The data on the place of foreign investments in the general structure of investments in the fixed capital of the CIS member States (breakdown by sources of financing) in 1998 is given in table 6.

**Table 6. Structure of fixed capital investment of CIS member States broken down by sources of financing in 1998**  
(Percentage of the total)

States	Budget funds		Funds of enterprises		Funds of foreign investors		Money of the population	
	1997	1998	1997	1998	1997	1998	1997	1998
Azerbaijan	2	2	24	25	69	69	5	4
Armenia	9	19	12	9	54 <sup>a</sup>	26 <sup>a</sup>	25	44
Belarus	19	25	45	47	4	5	15	17
Georgia	16	9	12	9	63	80	9	2
Kazakhstan	7	13	66 <sup>a</sup>	61	22 <sup>a</sup>	23 <sup>a</sup>	—	—
Kyrgyzstan	6	9	12	23	76 <sup>a</sup>	44 <sup>a</sup>	6	19
Republic of Moldova	9	14	73	67	14	10	—	—
Russian Federation	21	22	61	...	4	...	4 <sup>a</sup>	...
Tajikistan	71	82	—	...	18	...	5	...
Turkmenistan	...	...	...	...	...	...	...	...
Uzbekistan	25	24	42	30	18 <sup>a</sup>	20 <sup>a</sup>	7	19
Ukraine	9	13	82	71	1	3	8	9

Source: Based on Committee on Statistics of the CIS data.

<sup>a</sup>Foreign credits included.

Negative consequences of the active external credit and investment policy were manifested in the fact that the economy of some CIS countries had acquired the nature of a "debt" economy, dependent on injections from outside. The external economic policy in all CIS countries is formed and implemented as a priority component of the general economic policy. It reflects in the most concentrated form the strategic, political and economic interests of newly independent States and their ruling elite.

The principal objectives are very similar: an active breakthrough to the world community and an independent entry into the world's commodity and financial markets.

This is a manifestation and consolidation of the national state political and economic independence of each CIS country. It is from this angle that they view their own place and role in the world, especially in the post-Soviet political and economic space.

Under these circumstances, the Governments of nearly all CIS countries have taken measures to strengthen regulation and control over export and import operations and the movement of currency resources. On the other hand, there is an expressed tendency towards a growing role of the state in the organization of external economic activities in view of the international forms and rules. Reorientation of the principal components of the external economic activities (foreign trade, credit and financial relations, industrial and technological cooperation) from the CIS common market space to the world markets adapted to global economic ties has become a general strategic trend in the CIS.

A number of serious changes have been recently underway in the trade and economic relationships between the CIS countries, which, on the whole, are making them closer to the existing norms and regulations of international practice. The system of inter-state interrelated supplies on an equivalent basis has been practically curtailed, and the scope of state external trade operations has been drastically cut. The role of states in regulating external trade activities through tax, customs and currency control mechanisms has increased. The formation of an external trade mechanism based on a limited use of non-tariff regulation of exports of raw materials and products of military and dual purpose and the use of a protectionist customs tariff for protecting the internal market has been generally completed.

As a result of consistent liberalization of external trade activities, trade relations between the CIS countries are developing more steadily on the basis of market principles and are realized by the direct participants in the management process who bear responsibility for implementation of the concluded contracts. A free trade zone and a common customs space are being formed, although these changes have so far not produced a positive effect on the dynamics and structure of the external trade turnover.

## **Conclusions**

A trend towards slowing down and shrinking of mutual export-import operations has been consolidated inside the CIS.

Fully manifested is the limited influence of internal economic problems related to the general reduction of the industrial potential and the decline of effective

demand, insolvency of certain CIS countries and economic subjects, high mutual indebtedness for supplies, settlement complications, uncoordinated customs and tax and currency regimes.

Relatively favourable terms of trade with other countries of the world have not yet revived or stabilized the external trade activities of the CIS countries on the world markets. Formation of an economic union is a strategic objective of the CIS external economic policy, the first step in this direction being the creation of free trade zones. The massive influx of transnational corporations and international investors into the CIS countries is restrained by the underdevelopment of these States, high risks, an inadequate investment climate and absence of information transparency of the stock market. In the framework of financial and investment globalization trends, CIS still remains a "closed" zone, a periphery of the global financial market.

# 6

## The role of scientific and technical potential and high technologies in the development of the CIS economies

The scientific potential of CIS countries is in a critical state, mainly due to unsatisfactory budget financing of science, which was constantly on the decline during 1991-1997. Table 7 shows data on the reduction dynamics of the volumes of scientific and technical work calculated as a percentage of gross domestic product from 1990 to 1996.

The volumes of research and development, especially in the high-technology defence complex, where the operation of many big research units has practically ceased, have registered a nearly five-time reduction. The total number of specialists engaged in research work has also decreased.

As a result, the basic industrial organizations of CIS countries are curtailing high-technology production and science-intensive products determining the technical and technological production level. This is in sharp contrast with a rapid growth of such products in the developed and developing countries, and leads to an ever greater gap between them as concerns the level of the production and technological potential, the level and quality of consumption goods, and the living standards of CIS countries in general.

The negative phenomena, which at the first stage of reforms had affected only the introduction of technical achievements, at later stages penetrated more and more the sphere of fundamental and applied science and high-technology research and development based on advanced scientific and technical achievements.

**Table 7. Volumes of scientific and technical work implemented**  
(Percentage of the gross domestic product)

	1990	1994	1996
1	2	4	6
Azerbaijan	1.0	0.5	0.2
Armenia	2.5	0.2	0.3
Belarus	2.3	0.8	0.9
Georgia	1.2	0.1	0.2
Kazakhstan	0.7	0.3	0.3
Kyrgyzstan	0.7	0.3	0.2
Republic of Moldova	1.6	0.8	0.9
Russian Federation	3.0	1.0	1.0
Tajikistan	0.7	0.3	0.1
Turkmenistan	0.7	0.6 <sup>a</sup>	0.3
Uzbekistan	1.2	0.7	0.4
Ukraine	2.3	1.5	1.4
Total for CIS <sup>b</sup>	...	1.0	0.5

Source: Economic Union IEC, "Economy of the CIS, 1997", on the social and economic situation in the CIS member States.

<sup>a</sup>Hereinafter for Turkmenistan—1993.

<sup>b</sup>Hereinafter calculations for CIS are made by transferring all the volumes into Russian rubles using the official annual average rates of the national currencies in relation to the ruble, established by CIS national banks.

An analysis of the data in table 7 shows that the level of expenditures for science and design work in regard to the gross domestic product is reduced several times in all CIS countries, whereas in the United States of America, Germany and Japan it accounts for 3 per cent, and in the United Kingdom of Great Britain and Northern Ireland and France for more than 2 per cent.

The share of research and development in the sphere of new materials, high-technology processes and pre-production models of new equipment is going down, which can mainly be explained by low demand for such work, since potential customers lack the required funds, and the budget financing of sectoral and "factory" science that used to carry out a considerable part of this work in the framework of state orders has been nearly stopped.

The data on changes in the number of researchers in CIS countries, including pedagogical specialists engaged in research and development, are given in table 8.

**Table 8. Dynamics of changes in the number of scientists in the CIS countries**

	<i>Number of specialists engaged in R&amp;D</i>			<i>Number of pedagogical specialists engaged in R&amp;D in universities and institutes</i>		
	<i>1991</i>	<i>1994</i>	<i>1996</i>	<i>1991</i>	<i>1994</i>	<i>1996</i>
Azerbaijan	16.4	15.3	12.5	8.9	9.8	10.1
Armenia	17.2	6.3	7.3	1.2	0.8	0.5
Belarus	59.3	29.7	26.1	6.2	8.0	7.2
Georgia	33.6	19.7	16.5	3.6	...	3.3
Kazakhstan	27.6	19.7	14.6	8.0	3.9	2.8
Kyrgyzstan	5.7	3.5	3.3	0.5	1.2	1.8
Republic of Moldova	12.8	7.4	5.7	2.6	2.3	2.5
Russian Federation	1 079	705	573	89.9	72.8	65.4
Tajikistan	4.4	2.0	2.3	1.6	1.4	1.9
Turkmenistan	5.7	5.1	3.8	0.5	0.9	0.8
Uzbekistan	41.3	21.6	15.9	16.0	11.5	12.0
Ukraine	295.0	207.4	160.1	36.1	40.0	45.4

An analysis of these data shows that the number of specialists engaged in research and development is continuing to decrease in nearly all CIS countries. The greatest reduction during 1991-1996 was recorded in Armenia and Uzbekistan—almost 60 per cent, Belarus and the Republic of Moldova—55 per cent, Kazakhstan, the Russian Federation, Tajikistan and Ukraine—46-48 per cent and Azerbaijan—24 per cent. The reduction is mainly made at the expense of specialists from research institutes and design bureaux belonging to sectoral science and scientific units of industrial enterprises.

According to the Institute of Economics (Russian Academy of Sciences) data, the aerospace part (one of the most high-technology ones) of the defence establishment alone has lost more than 35 per cent of doctors and science candidates, the majority of whom are continuing their professional career abroad. For example, over 100 space research specialists, who are former Russian citizens, are currently working in the United States aerospace complex (NASA); about 90 per cent of the staff of the Israeli defence establishment is made up of former Soviet and Russian specialists.

The current situation in regard to the development of integration in the field of science and high technologies in the CIS is far from satisfactory. Integration of CIS countries is often impeded by serious differences in legislation, property

relationships, taxes and financial and credit policies. Absence of a settlement mechanism between countries with non-convertible currencies and underdevelopment of the legal base of national scientific systems also have their effect.

Of great importance for the support and development of science is a comprehensive integrated solution of financing problems, as well as a reasonable combination of the basic State budget financing of fundamental and applied research with a purely commercial approach to applied research, in particular on a repayable basis. However, it can be judged from the world's experience that basic State funding of the scientific research still retains strong positions and cannot be fully replaced with project-based or private financing.

Viewed against the global development trends, production of high-technology equipment in CIS countries is being drastically reduced. In the Russian Federation, for example, according to the Institute of Economics data, up to 80 per cent of engineering enterprises have changed their profile to production of garages, containers, grids and other simple equipment. The negative trend of the 1990s has brought about a sharp decrease of the engineering production share in the total production volume (from 17.5 per cent in 1991 to 4-5 per cent in 1997).

One of the key reasons limiting integration in the scientific and technological sphere is the absence of effective integration mechanisms in CIS countries. A great effect could be expected from the formation of transnational science and technology centres, strategic technological alliances, consortiums capable of covering the main parts of the innovation cycle and financial and industrial groups based on the western experience. All these structures are able to successfully solve the market development problems within the CIS, and in the long-term perspective they can work towards achieving global competitiveness.

A comprehensive programme for long-term cooperation of CIS countries in the field of science and technology needs to be developed, including implementation of a strategy aimed at deepening the social division of labour among CIS countries in the field of science and technological development. The CIS countries should agree on the priorities for CIS scientific and innovation development for at least 10 years. The accent should be on those R&D areas that may lead in the long term to world leadership in certain spheres of science and technology.

As regards scientific and technological integration, three parties should actively cooperate, i.e. state structures of the CIS countries, commercial organizations and public associations of scientists and specialists. As a short-term objective for the development of integration links, CIS countries should create the necessary conditions for a transition to the innovative development option for the CIS national economies. A transition from economic crisis to revival and growth of the CIS national economies is impossible without a more rapid growth of the innovative component of investments as compared with the GDP growth rates.

Science, new equipment and high technologies should become key priorities of the CIS social and economic development.

Within the framework of national support programmes for scientific and innovation activities in CIS countries, support of non-governmental investments (like crediting, leasing, investments in securities of science and innovation organizations etc.) is playing a more and more important role.



One of the possible approaches to financial integration in the sphere of science and technology could be creation of multifaceted financing sources—a network of inter-state funds for financing of fundamental research, technological development, or activities of small innovation enterprises.

## **Conclusions**

If decisive and well-coordinated action aimed at supporting and developing science and technology potential is not taken shortly within the CIS framework, the CIS countries may in three or four years face the problem of being unable to provide for their major economic requirements independently, which will inevitably force the CIS countries to solving their internal problems by massive import of equipment and technologies.

The objective necessity of speeding up production technology upgrading on the basis of the existing scientific and technological potential determines the general strategy of CIS economic reforms and requires, in its turn, finding solutions to a number of tasks related to administrative, normative, financial and legal support for science and technology, as well as innovative entrepreneurship.

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# 7

## Analysis of the situation related to integration of the CIS national economies at interregional level, the CIS level, and on the world market

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The historical processes of internationalizing productive forces and economic ties between the national economies have formed qualitatively new trends in the world economy. The globalization of the world economy is perceived and estimated differently. It is welcomed by developed countries and arouses serious concerns in the developing world.

Globalization of the world economy suggests deepening and expansion of integration spheres. Especially active in this field are social and economic reforms, which, starting from the late 1980s, early 1990s, have been accepted and called for in the CIS countries, which formerly had centralized planned economies. Although the CIS countries have their own peculiarities as regards the national reformative mentality and political practice, a connection with the global trends in the field of social and economic reforms is obvious.

The formation in 1991 of CIS was designed to ensure a painless transition from a single united State to a system of independent national entities, and to help them establish new relations based on the principles of political, economic and social community. The lowered efficiency of trade and economic relations among the CIS countries in 1992-1993 gave an impetus to the signing of another integration agreement—the Treaty on Economic Union. In 1994-1995, a number of agreements on setting up the Payment and Customs Unions was signed.

The key role in the formation of a common free market zone of the CIS countries was given to the Inter-State Economic Committee of the Economic Union (IEC) set up in 1994. The documents signed in the CIS framework became the basis for the formation of other CIS bodies, among which were the Inter-State Statistics Committee, the Inter-State Customs Committee, the Inter-State Standardization, Metrology and Certification Council, the Intergovernmental Oil and Gas Council, the CIS Electric Power Council etc. At the end of 1999, seven chartered and 68 sectoral and other bodies and organizations were effective.

In the first years following the acquisition of independence by the former Soviet republics and the formation of CIS, two trends were observed in the relations among the CIS countries, i.e. the integration trend, which represented the desire to restore the broken ties, and the disintegration trend, which acted towards strengthening the national sovereignty of the CIS countries through isolationist economic measures. As a result, despite the formation of new integration structures (the Economic and Customs Unions, IEC etc.), the absence of coordination in the economic policy of the CIS countries, the introduction of national currencies and different payment mechanisms, as well as customs barriers and other factors, separated the economies of the CIS countries and considerably limited their traditional sales markets.

An analysis of market reforms in the CIS countries from the point of view of their effect on the formation of integration processes shows that the main obstacle to integration is currently posed by inadequate economic reforms pursued in the CIS countries on the basis of different national patterns. The national factor had acquired a self-sufficient meaning and prevailed over the integration factor. The obviously necessary decisions of an integration nature in many cases were not in line with the national interests of some CIS countries, and for this reason they ignored many joint decisions adopted earlier.

Meanwhile, the world integration practice has proven that national economies with different structures and development levels can in fact be integrated if they are based on similar national economic policies, economic conditions and legislative foundations, and if the integration factor is given a priority. Thus the main task for the CIS countries is to identify "spheres of similarity" in the CIS countries, where real integration processes are really possible.

During the last 12-18 months the economic reforms in the CIS countries have acquired two important peculiarities. Firstly, countries which originally followed radical liberal reform patterns (Armenia, Kyrgyzstan, Republic of Moldova and Russian Federation) have strengthened their course directed at active participation of the state in the economic processes and expansion and development of state regulation in all spheres of life. The second peculiarity is characterized by expansion of the field of economic liberalism in those CIS countries (Azerbaijan, Belarus, Georgia, Kazakhstan, Turkmenistan and Uzbekistan) which initially pursued the course directed at maintaining a strong and decisive role of the state in the economy and its reforms. The development of these trends creates favourable conditions for giving up radically liberal and radically conservative extremes, for bringing reform patterns closer to each other, and for a joint turn to the formation of national economic mechanisms, which, while not yet being of the same type, are already similar in their main principles.

It is now possible in the long term to define the real integration potential of each CIS State, as well as their possibilities, place and role in the integration processes at subregional levels, within the CIS and in the world community. Growing diversification of the economic and political interests of the CIS countries has resulted in the formation of several regional unions on the post-Soviet territory.

The first to appear (in 1993) was the Central Asian Union (CAU), which united Kazakhstan, Kyrgyzstan and Uzbekistan. The creation of the Union reflected a growing awareness among the former Soviet republics of central Asia of their geographic, cultural, political and economic community. In practice, however, recent attempts to unite the efforts of the CAU countries in the field of economic and defence integration have yielded very modest results.

Considerable reinvigoration of integration processes among the Transcaucasian and central Asian countries has been observed lately. As far back as in 1995, enterprises in Georgia, Azerbaijan, Turkmenistan and Uzbekistan signed an agreement on establishing a transport corridor through the Caspian-Transcaucasian region to transport goods from central Asia to Europe. Apart from political motives for the rapprochement between Azerbaijan and central Asian countries, there exists an economic basis which is no less important. As a big oil exporter, Azerbaijan wants to receive the economic advantages which an oil transit country may enjoy. For Kazakhstan, the problem of oil transportation is of great importance for its future economic development. These mutual interests and aspirations were laid down in the 1997 understanding between Azerbaijan and Kazakhstan on the construction of an underwater pipeline in the Caspian Sea.

The inefficiency of the CIS and the decreased Russian role on the southern CIS borders have brought about stronger cooperation between central Asian countries and their southern neighbours. This trend was reflected in the creation and functioning of the Economic Cooperation Organization (ECO), which includes, beside all the five CIS central Asian States, Afghanistan, Azerbaijan, Iran, (Islamic Republic of), Iraq, Pakistan and Turkey. The members of this organization regard the development of a transport and communication infrastructure, power engineering branch and a transnational pipeline network in the region as their primary objective.

The common historical heritage and similar mentality encourage the CIS countries to focus on various administrative levels of integration, i.e. signing of multiple treaties and agreements (there are already about 1,000 of them), setting up of various committees, commissions, councils etc. However, the differences in political interests, increased concerns over the recently acquired independence, and urgent national economic problems do not allow the creation of viable supranational bodies with respective authorities within the CIS framework. The practical integration results in the CIS have so far been rather modest.

Among the long-term tasks, collective solution of which could cement the CIS, the following may currently be named:

- ❑ Maintaining the ties in high-technology industries (aerospace, telecommunications, information technologies etc.) and in the agricultural market;
- ❑ Ensuring a joint search of long-term niches for the CIS in the world economy and relations with other integration groups, as well as collective protection of their common interests against discrimination, unfair competition and other threats emanating from third parties;
- ❑ Coordinating the restructuring of inter-country specialization and production structure;
- ❑ Ensuring joint technological breakthroughs, maintaining and consolidating the common scientific and technological potential;
- ❑ Developing and implementing big economic projects etc.

The key role for the restoration of a common free-market zone in the CIS framework belongs to micro-level market integration, creation of joint ventures, inter-state financial-industrial groups and other transnational production, commercial and financial structures. It is in this way, using the interests and actual activities of manufacturers, businessmen and financiers, that a promising high-technology industry and high-technology enterprises can be saved both in the Russian Federation and other CIS countries. It is only in this way that traditional markets can be restored and such market pillars as small- and medium-scale enterprises can be strengthened.

According to many estimates, up to 500 transnational associations and financial-industrial groups may appear on the territory of the CIS in the near future, mainly with Russian participation. This will make up a real and sufficiently strong framework for the whole post-Soviet integration space. Nevertheless, it should be mentioned that separate groups of countries are being formed within the CIS, whose external economic orientations are becoming more and more divergent. The possibility cannot be excluded that in the foreseeable future a number of CIS countries having considerable energy or raw material resources, like Azerbaijan, Kazakhstan, Turkmenistan and Uzbekistan, will try to reorient completely along the lines of foreign States.

## Conclusions

The progress of integration within the CIS is so far rather slow. Many CIS countries still hope that they will at some future time be able, with the help of foreign investments and their own resources, overcome their dependence on the Russian Federation and be integrated into the world economy on equal terms with the others. So far, the balance between the centripetal and centrifugal forces within the CIS is in favour of the latter.

The success of integration in the CIS is first of all dependent on the success of market reforms in all the CIS countries. But if tangible results are achieved in the short term in such key areas as coordination of market reform rates and directions, removal of obstacles in the mutual taxation sphere, expansion of mutual opportunities for acquiring property in the territories of the CIS countries, coordination of the currency policy etc., this will in itself be a big step ahead, in the direction of real and efficient integration.

On the whole, the integration processes within the CIS, though planned as a means of jointly entering the market and restoring the broken economic ties, have not yet become real factors of overcoming the negative consequences of the separation of the former Soviet Union republics, of the restoration and growth of their economies, and synchronization of the systems reforms and market transformations.

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# 8

## Conclusions and recommendations

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While identifying priority tasks in the development of economic integration, it should be taken into account that the CIS today is not the same union as was formed in 1992. It is not a matter of change in the purposes and principles of its existence. It is the States themselves that are changed. They are now sovereign States, with their own policies, world ties, economic development programmes, and aspirations as regards finding their own ways of joining the world economic community. Only mutual interest in filling their markets with scarce goods, services and capital and in creating new jobs can encourage the States to remove political and economic barriers on the way to integration and formation of a common market.

To ensure a stable and balanced entry into the world economic community, it is necessary to provide a stronger inter-state regulation of economic, social and institutional reforms, and to synchronize their implementation. Successful formation of a CIS common market can only be achieved on the basis of creating favourable conditions for growth of mutual commodity turnover, development of production specialization and cooperation and implementing reasonable measures for the protection of joint commodity and service markets. Strengthening the positions of national commodity producers can yield a great effect.

The recent rapprochement of the patterns, purposes and structural characteristics of the reform actions of the CIS countries in practical policy and legislative practice is of great, probably decisive, importance for the coordination and synchronization of future reforms, creation of similar national economic mechanisms and equal conditions for the movement of commodities, services, capital and labour among the countries.

This will, in its turn, provide an opportunity for the CIS countries to join in the foreseeable future the globalization processes which have for the last decade been guiding the economy of the developed and developing countries to constant expansion of economic and financial integration. Besides apparently positive results of globalization, there are certain negative features of this process, related to the vulnerability of countries to the destabilizing effects of market instability, including those that are brought about by inconsistent structural reforms, absence of the required competitiveness of goods and services, and hesitations in pursuing market reforms.

UNIDO can and must be a partner of the CIS countries in helping them to solve all the above-mentioned tasks and problems, which the CIS economies and their industrial sectors are facing.

At the October 2000 UNIDO Regional Forum the CIS countries are expected to provide concrete guidelines to assist the countries concerned in coping with key problems of transformation. The policy advice would be of paramount relevance in such areas as:

- Formation of market infrastructure institutions;

- ❑ Structural reforms and creation of transnational structures;
- ❑ Support for small and medium businesses;
- ❑ Development of innovation and investment processes and technologies;
- ❑ Raising the competitiveness of the products;
- ❑ Solving environmental problems;
- ❑ Other technologies and processes which are essential components of the services offered by UNIDO.

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