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**Research Report**

## Romania's industrial policy in the post-accession period

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# EUROPEAN INSTITUTE OF ROMANIA

## Project SPOS 2007 - STRATEGY AND POLICY STUDIES

### Study no. 7

## ROMANIA'S INDUSTRIAL POLICY IN THE POST-ACCESSION PERIOD

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## **Introduction**

This study undertakes to investigate the possible connections existing between the sectoral policies and the major goals of the Romanian economy, immediately after the accession to the European Union, the analysis being devoted to the industrial policies implemented during the recent years and to those proposed to be implemented during the post-accession period.

To start with, we should note that in the Anglo-Saxon economic culture, the industrial policies are synonymous to what the continental/Mediterranean type of culture calls sectoral policies. Therefore, both the analysts and the policy-makers from Romania use the paradigm “industrial policies” when they refer to the interventions in the sphere of industry or, particularly, in the manufacturing industry, which erroneously limits the true range of the potential area of intervention.

This study refers to all the sectors of the national economy and to the instruments through which the governmental interventions are achieved, which may result in reallocating the economic resources between sectors and in changing the inter-sectoral differences of the effects of the implemented policies.

The multiple definitions of the industrial policy over time range from a very general level – Graham (1986) defines them as those economic policies which produce a certain effect in the industry or services sectors – to a particular level, where “particular” may mean narrowing the area of action to the industry sector (Foreman-Peck & Frederico, 1999) or narrowing the range of political instruments, for instance, Sharp (1998) considers that only the use of subsidies may be regarded as industrial policy. Many times, the definition given to the industrial policies hides the opinion of its author on the usefulness of these policies, going all the way to the negativism displayed by the followers of the extremist liberal doctrine (“the market regulates everything” – for instance, Geroski (1989), who mentions the set of microeconomic initiatives wrongly matched in terms of offer), to the over-positivism with advertising enticement intended to promote protectionist political measures (Aiginger & Sieber, 2005, define thus any activity which creates a favourable business environment). All these definitions contain a degree of truth because they capture aspects, many times relying on experience, which characterize the measures of economic policy generated in order to change the status quo of an economy. A comprehensive and quite neutral definition was, perhaps, given by Adams & Klein (1983) or by Johnson (1984): “the initiation and coordination of those governmental policies aimed to increase the productivity and competitiveness of an economy or of certain economic branches”.

This study will attempt to maintain on the line of a neutral approach. This requires taking into consideration any economic theory and any political measures which affect the economic inputs and analysing the results of those particular actions in terms of the goals and criteria imposed by the policy-makers. Many times, the goals of the government are correlated to macroeconomic indicators such as productivity, unemployment rate, foreign competitiveness or labour force participation (occupation) rate.

Chapter 1 deals with the industrial policies applied within the European Union, worldwide, or at the specific national level. The evolution of the concepts of industrial policy is analysed, as well as the related experience of the new member states compared to the older member states. The successes are highlighted, stressing on the dynamism of the set of policies and on the arguments backing the implemented policies.

Chapter 2 analyses the state of affairs and the history of the industrial policies in the case of the Romanian economy, as well as the strategic-programmatic documents substantiating the

past measures of economic policy or those recently proposed. Subsequently to these analyses and syntheses, Chapter 3 reviews the measures of reallocation of the economic resources between the sectors of the Romanian economy, as well as the visible or expected results of these measures. The chapter also presents the priorities of economic development resulting from several Romanian programmatic documents, used as strategic goals for the introduction of industrial policies.

The last chapter sums up the conclusions of the analyses presented in the paper and proposes several suggestions and recommendations for the industrial policy decision-makers.

## **1. Evolution of the industrial policy in the European Union**

The European industrial policy underwent numerous transformations over the past two decades, evolving from a sectoral and interventionist approach to a preponderantly horizontal and competitive one.

As effect of the globalization process - Sharp (2000)<sup>1</sup>, Sharp (2001)<sup>2</sup> – and in parallel with the process of industrialization, from the start of the process of integration in the 70s and up to late 90s, the industrial policy of the EU member states<sup>3</sup> evolved as shown below (Sharp (2003)<sup>4</sup>):

- *from interventionism to „laissez-faire”* (particularly during 1970-1980, under the pressure generated by the process consolidation of the multinational companies which many times emerged from the merging of the “national champions” in several key areas – telecommunications, electronic goods, semiconductors);

- *from subsidizing the large companies (“national champions”) to subsidies and facilities for the SMEs.* This political reorientation was accompanied by major structural changes; by the lowering the contribution to the total added value of some sectors such as ship building, steel production and mining. The process started in the 80s, aiming initially the start-up in areas based on emerging technologies. The policy of SMEs support became balanced during the late 90s, but the stress on supporting high-tech companies (start-ups and SMEs) remained strong. The policies of SMEs supporting remain an important pillar of the European industrial policies;

- *from national policies to regional policies* – this trend followed largely (both logically and chronologically) the one oriented towards the SMEs. At the same time, it was promoted in the areas where SMEs clusters formed. These policies were refined towards the late 90s by laying the stress on the creation of infrastructures for knowledge dissemination;

- *from the stress on financing the infrastructures and the physical capital to the stress on human capital development*, present especially after 1990, following the criticism of (1992)<sup>5</sup>: the human capital is much less susceptible to reallocation than the physical capital. Towards the mid 90s, education (including the permanent education and the education of the local demand) became a priority.

- *back to active industrial policies*, including sectoral components aimed, among other, to compensate the different sectoral effects of the horizontal policies, policies promoted indirectly and in a concerted manner through the Lisbon strategy starting from 2005.

### **1.1 Brief history of the European sectoral policies**

The emergence of an industrial policy at the European level is marked by the signing, in Paris, of the Treaty for the Coal and Steel Community, in 1951, and of the EURATOM Treaty, in

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<sup>1</sup> M. Sharp, *Synthesis Report on Six Country Studies*, SPRU, University of Sussex, UK, mimeo, 2000.

<sup>2</sup> M. Sharp, *Science, Technology and Broad Industrial Policy, Final report for TSER Project*, SPRU, University of Sussex, Brighton, UK, mimeo, 2001.

<sup>3</sup> Only during the recent years can we speak of a European industrial policy, although the fundamental elements of such a policy (the policy of competition, in particular) have actually always been in the focus of the political attention at the supra-state level. At the country level, however, such policies are the subject of similar trajectories.

<sup>4</sup> M. Sharp, *Industrial Policy and European Integration: lessons from experience in Western Europe over the last 25 years*, SPRU University of Sussex, WP no.30, 2003.

<sup>5</sup> R. Reich, *The Work of Nations*, Knopf, New York, 1992.

1957. Although the treaty aimed to promote the free competition and the removal of the trade barriers between the member states, it set the grounds for the later interventionist industrial policies. Articles 58, 60 and 61 of the Treaty stipulate provisions on several instruments of intervention: development plans, production quotas, price control, etc.

### **1.1.1 Interventionist policies to promote the national champions and to protect the declining industries**

The period between 1970 and 1980, characterized by recession and by strong economic and social tensions, brought in front strongly interventionist and protectionist sectoral policies. It was a period in which the industrial policies of the European states aimed at: a) *picking the winners* and supporting directly some firms and sectors perceived as having competitive advantages on the European and world markets; b) the protection of some declining national industries. Therefore, this a period dominated, on the one hand, by the policy of the “national champions” and, on the other hand, by concerted efforts to save declining industries (such as the Crisis Cartel which functioned in the steel industry between 1980-1985). The approach to the industrial policy was strongly sectoral, and the list of the sectors which benefited from this context is long: automobile industry, aeronautical industry, ship building, coal industry, steel industry, textile industry, telecommunication equipment industry etc. Although the effect of these policies is difficult to quantify, they might have contributed to widening, starting with the 80s, the technological and economic growth lag between Europe and the United States, which continues during the resent days too. For instance, the fact that over the past twenty five years the European ICT industry was not able to improve its competitive position on the world market, despite sustained efforts at European level, is attributed by some authors (Pelkman, 2006) to the protective (and protectionist) position towards this industry, which disappeared only during the 90s.

### **Horizontal and pro-competitive industrial policies**

In the 80s, on the background of an increasing dissatisfaction towards the effects of the interventionist policies, a new paradigm starts to gain position worldwide, which states the economic superiority of the competitive markets compared to etatism and interventionism. It reflected in the gradual redefinition of the role of all the economic policies, including the role of the industrial policy. The fundamental role of the economic policies is, according to this vision, to establish competitive markets (by liberalization and removal of the barriers to free competition) and to establish the conditions for a better functioning of the competitive markets (by correcting market failures, by providing a stable macroeconomic framework and by the competition policy).

#### The single market

At the European level, this new trend, together with the concern on the widening technological and economic growth gap compared to the USA and Japan, reflected in the project of the Single Market. This marks the beginning of major changes in approaching the European industrial policy, aiming to stimulate the competitiveness of the European industry by expanding the concurrential markets. Despite this, the *Single Act*, the document which set formally the bases for the Single Market in 1986, doesn't include a basis for a joint industrial policy. It only aimed the expansion of the internal market so that the companies may benefit of the advantages of the scale economies, thus becoming competitive at the international level (Croitoru, Russu and Târhoacă, 2002).

### The Bangemann Communication

The 1990 European Commission communication, *Industrial Policy in an Open and Competitive Environment: Guidelines for a Community Approach*<sup>6</sup>, (also named the Bangemann Communication) marks both the start of a coherent industrial policy at the Community level, and the shift of stress on the horizontal policy directed towards creating a framework more favourable to increasing the competitiveness of firms.

### The Maastricht Treaty

The ideas of the communication were assumed by the Maastricht Treaty (article 157), which introduces for the first time the legal basis for a joint industrial policy, whose goal is competitiveness and which is in agreement with “a system of open and competitive markets”. To this purpose and within this framework, the Commission took measures “to increase the speed of economy adjustment to structural changes; to promote an environment favourable to initiative and to business development, particularly for the small and medium enterprises; to promote an environment favourable to cooperation between companies; to stimulate a better utilization of the industrial potential of the policies of innovation”. To reach these goals, the Community was to adopt “policies and activities which it aims through other stipulations of the Treaty” and the Council, acting in unanimity, could adopt measures in support of the actions taken by the Member States. The article banned the adoption of the Community of measures that might distort competition and, thus, limited significantly the area of the interventionist industrial policies. The concept of horizontality became, due to Maastricht, a principle of the industrial policy. It is fundamented on the will: a) not to make sectoral (vertical) interventions; b) to isolate the industrial policy from the pressure of ad-hoc interventions in support of enterprises or sectors; c) not to pick “winners” or to promote “national champions”. Starting with the Maastricht Treaty, the industrial policy was developed through a large set of documents of economic policy. Following is a presentation of the most important ones.

### The first document of industrial policy

Right after the Maastricht Treaty, a first document of industrial policy was published, “*An Industrial Competitiveness Policy for the European Union*”<sup>7</sup> which identifies four horizontal priorities of development: a) promote intangible investments (promote quality, clean technologies, research, develop the industrial cooperation); b) provide for a fair competition at the European and international level (among the initiatives are the development of a stricter and more coherent regime of the state aid and the development of a joint market for the industries from a network); modernization of the role of the public authorities (by the reform of regulation, by simplifying EU legislation, by improving the administrative cooperation between the Members States etc.). Part of these initiatives formed a body of concrete policies which the EU implemented and developed continuously.

### **Relaunching the debates on the industrial policy**

#### “Industrial policy in an enlarged Europe”

On the background of the failure of the Lisbon process and of the low pace of economic growth, and of the low rate of economic growth, during the past years, the top politicians and the representatives of the industry supported the idea of a trend of “deindustrialization”,

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<sup>6</sup> European Commission, *Industrial Policy in an Open and Competitive Environment: Guidelines for a Community Approach*, COM (90) 556, Brussels, October 1990.

<sup>7</sup> European Commission, *An Industrial Competitiveness Policy for the European Union*, COM (94) 319, Brussels, September 1994.



which would justify the redefinition of the purpose of the industrial policy and which would justify actions to protect the affected industries. Deindustrialization refers to the migration of the manufacturing activity from the developed states to areas with lower work force costs and lower social costs (for instance the Asian countries or the new member states). In Europe, this phenomenon would be caused by the inflexibility of the labour market regulations, by the high social costs and by the burdening regulations imposed on the manufacturing sectors.

In 2002, the Commission published a communication entitled “*Industrial Policy in an enlarged Europe*”<sup>8</sup> in order to launch a public debate on the directions of the industrial policy under the conditions of what was perceived as a change in its political context. In the years after the Bangemann Communication, the internal market had consolidated, the EU was to expand with new members, and the Uruguay rounds had expanded the liberalization of the world trade. Despite these favourable evolutions, Europe was confronted with low rates of growth and with a slow rate of productivity growth. It was obvious that under these circumstances, the EU could not become by 2010 “the most competitive and dynamic knowledge-based economy worldwide, capable of sustainable growth with more jobs and with a higher social cohesion”, as the Lisbon Agenda had set. The commission concluded that the manufacturing industry was not paid enough attention due to tertialization. But tertialization, argued the Commission, is in itself a product of the increasing demand for business services, which originates from the manufacturing sector and which contributes significantly to the European Union GDP. In order to relaunch the European growth, the industrial policy had to consolidate the industrial basis of the EU. This was possible through specific policies, for the identification of some initiatives, horizontal in nature, but which “to facilitate the development of areas with a strong potential”. Therefore, the 2002 Communication marked in the industrial policy of the EU the shift of accent from the horizontal initiatives to the sectoral ones and a refocusing of the attention on the manufacturing sector.

This document conveys several other key messages:

- within the context of the challenges posed by globalization, Europe must orient towards knowledge-intensive industries, but location is a crucial factor for research and innovation. Therefore, Europe had to develop its attractiveness as location;
- innovation, the entrepreneurial activity and the assuming of risks are deficient areas in Europe which must be stimulated by concerted policies;
- all EU policies contributing to the increase of competitiveness must be approached in an integrated manner, based on the analysis of the systemic problems of the framework for industrial activity. The European Council demanded the Commission in October 2003 to evaluate how much real is the threat of deindustrialization and to come forth with a set of control measures.

#### Stimulation of the structural changes

In April 2004, the Commission published a new communication entitled “*Stimulation of the structural change: a policy for an enlarged Europe*” which examines the risks of deindustrialization. Following this analysis, the Commission concludes that “there is no evidence of a generalized process of deindustrialization”, but that Europe is in the middle of a process of structural change by which the resources from the industrial sectors are reallocated towards the sector of services, an unavoidable process, which must not be resisted against. Nevertheless, the Commission’s analysis showed that the slow pace of this reorganization

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<sup>8</sup> European Commission, *Industrial Policy in an enlarged Europe*, COM(2002) 714 final, Brussels, November 2002

together with certain processes of localization, are worrying factors. The communication acknowledged that the performance of the European economies in terms of productivity, research and innovation are disappointing and that the level of assuming risk and entrepreneurship is still low in Europe. The Commission proposed a set of concrete solutions to increase competitiveness and to stimulate the process of structural change, grouped on two priorities:

- 1) „A better regulation” (RIA, *one-stop-shop regulation*, alternative methods of regulation, reevaluation of the impact of the existing *acquis* on the competitiveness, verify the cumulative effects of the regulation, etc);
- 2) An integrated approach of competitiveness through several policies (innovation policy, domestic market for research-development; policies on the human capital; policy of competition in the field of innovation; technological transfer, the new regulations of mergers based on the test of efficiency; deepen the degree of internal market integration etc).

## **1.2 A retrospective look at the industrial policies from the Central and East European countries (EU8) before and after integration into the EU**

There are a few important arguments to attempt a positioning of the policies promoted by Romania within the regional context. Romania, like the other Central and East-European countries, had to achieve a major qualitative leap in order to align to the evolving EU policies in all areas, including in the industrial policies. The learned lessons are valuable and the trajectories followed during the accession period set specific premises for the implementation of the new EU industrial policies.

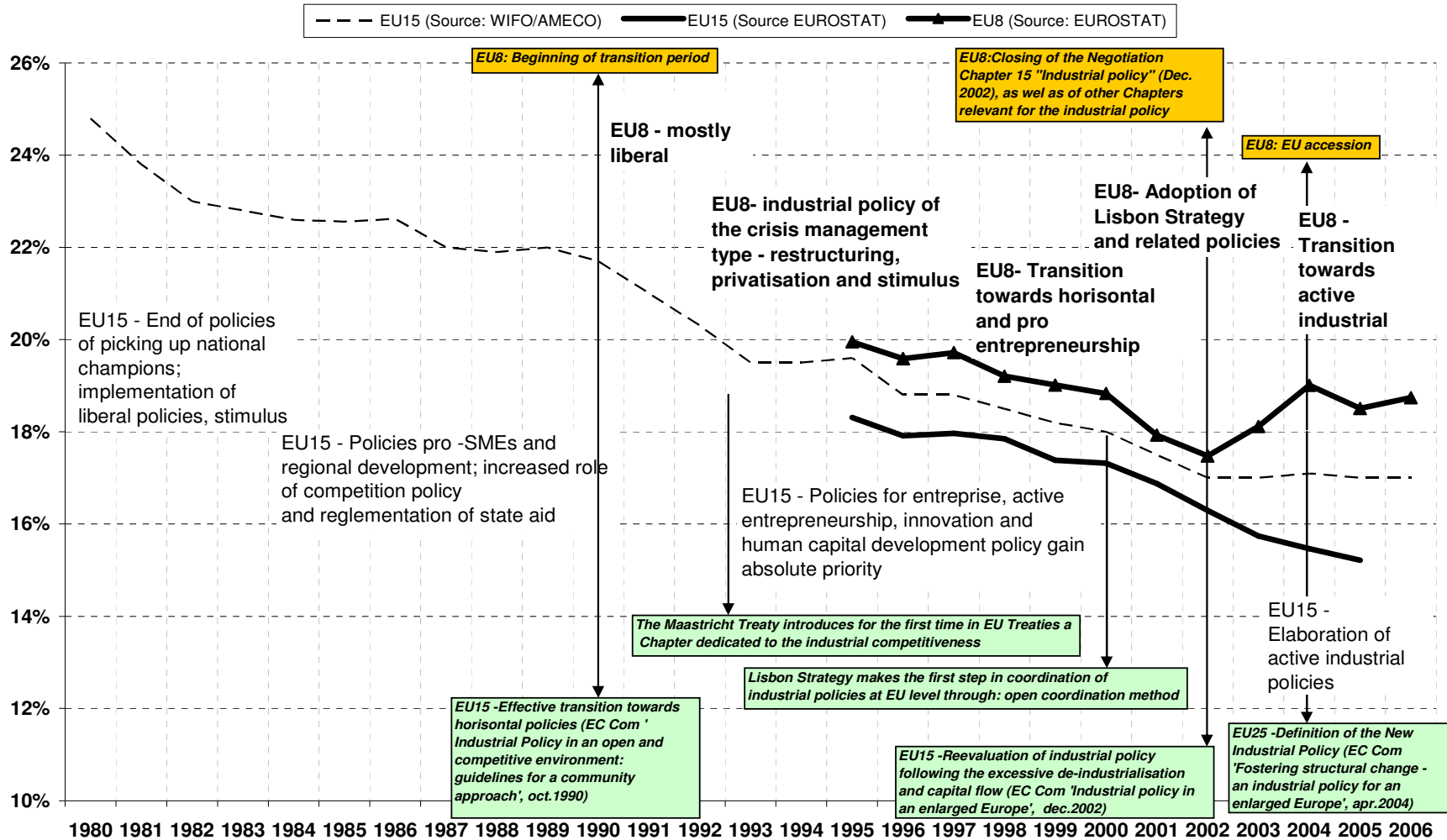
With the view to make this exercise, we will refer permanently to the general framework of the EU industrial policies in the different periods that we consider. Indubitably, the experience of the transition countries were substantially influenced by the EU15 trends and, in turn, influenced them.

Over the past three decades there has been a continuous evolution in formulating and applying the mix of measures and instruments component of the industrial policies: from protectionist tariffs and non-tariff barriers to trade liberalization, subsidies and facilities for direct foreign investments and to the establishment of favourable conditions for the enterprises, educational programs and the innovation policy in its whole. Essentially, the evolutions of the industrial policy are largely determined by the process of globalization. Due to the logic of location and relocation of the industrial activities, the process of globalization will generate a decrease of the share of industrial production within the GDP of the developed states, in favour of an increased share of services. The excessive deindustrialization, however, entails risks for the particular economies and the acknowledgement of these risks caused the reconsideration of the value of the industrial policies. Although the European Commission admitted subsequently that there are no grounds to consider deindustrialization a real risk for the EU, the most recent policies include the application of sectoral policies in the top technologies with the view to maintain the EU economy as close as possible to the world technological frontier.

.1 presents in a historical perspective the process of deindustrialization (approximated by the share of the manufacturing industry within the GDP) in EU8 (the 10 new member states that entered in 2004 less Cyprus and Malta) and EU15 member states.

**Figure 1.1.1** presents in a historical perspective the process of deindustrialization (approximated by the share of the manufacturing industry within the GDP) in EU8 (the 10 new member states that entered in 2004 less Cyprus and Malta) and EU15 member states.

Figure 1.1: Deindustrialization in EU15 and EU8 - share of the manufacturing industry within the GDP



Sources: Aiginger and Sieber (2006) for WIFO/AMECO data on EU15. EUROSTAT for the data on EU10 and the alternative calculation of EU15 after 1995; <http://www.euractiv.com/en/future-eu/industrial-policy-industrialisation/article-117509> and the links for information on the industrial policy of EU15, corroborated with Sharp (2003); Török (2007) and <http://ec.europa.eu/enlargement> for information on EU10.

***The evolution of the weight of the manufacturing industry within the GDP in Central and Eastern European countries shows a trend of rapid convergence.*** First, it is important to notice the parallelism between the evolutions of the two areas after 1995. More than that, it is remarkable that the Central and Eastern European countries decreased, from an average of 40% of the manufacturing industry within the GDP at the beginning of transition (cf. Török (2007)), to a share comparable to the EU average in 1995. The parallelism of evolution of the two areas continued until the year when negotiations ended when, on the one hand, as effect of harmonizing the legislation and of the institutional stabilisation, the multinational companies seem to have preferred this area instead of Asia, generating an increase of the industrial production in real terms; on the other hand, the domestic demand and the access to the single market have stimulated the domestic production. Indeed, according to Eurostat data, the added value produced in the industrial sector of EU8 increased dramatically in real terms starting especially with 2002 (7.6% in 2002, 10% in 2003, 7.5% in 2004 and no less than 14% in the year following their integration, 2005).

Table 1.1 shows the evolution of the structure of the added value in EU15 and EU8, according to the aggregation proposed by Aiginger and Sieber (2006)<sup>9,10</sup>.

**Table 1.1: Changes in the structure of the value added in EU15 and EU8**

<b>EU15</b>	<b>1995</b>	<b>2000</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Agriculture and mining	2,7%	2,2%	2,0%	1,8%	NA
Manufacturing	20,4%	19,4%	17,3%	17,0%	NA
Energy and construction	8,2%	7,4%	7,8%	8,0%	NA
Retail trade and related services	11,6%	11,6%	11,3%	11,3%	NA
Total services, from which:	57,1%	59,4%	61,6%	61,9%	NA
Business services	19,2%	21,4%	22,2%	22,4%	NA
Public services (administration, education, health)	18,3%	18,0%	18,6%	18,6%	NA
Other services	19,5%	20,0%	20,8%	20,9%	NA
Manufacturing and other services	39,6%	40,9%	39,5%	39,4%	NA
<b>EU8</b>	<b>1995</b>	<b>2000</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>
Agriculture and mining	6,9%	4,8%	4,5%	4,1%	3,8%
Manufacturing	22,6%	21,2%	21,5%	21,0%	21,2%
Energy and construction	10,1%	10,1%	9,4%	9,7%	9,9%
Retail trade and related services	14,9%	16,2%	15,3%	15,8%	16,1%
Total services, from which:	45,5%	47,7%	49,3%	49,7%	49,0%
Business services	11,8%	13,9%	14,2%	14,5%	14,5%
Public services (administration,	14,5%	14,5%	15,3%	15,2%	14,8%

<sup>9</sup> K. Aiginger, and S. Sieber, *The matrix approach to industrial policy*, International Review of Applied Economics, vol. 20, no. 5, pp. 573–603, December 2006.

<sup>10</sup> Unlike Aiginger and Sieber (2006), we also detailed the sector of services, as an illustration of the above reasoning.

education, health)					
Other services	19,1%	19,3%	19,9%	19,7%	19,7%
Manufacturing and other services	34,4%	35,2%	35,7%	35,5%	35,7%

Data source: Eurostat.

Unfortunately, there are no available data which to allow this analysis for the beginning of transition. What is obvious (and largely supported by the field literature), is that during early transition an “agrarisation” type of deindustrialisation (understood broadly as withdrawal towards low added value activities) was indeed manifest. Among other, this evolution generated the need to adopt crisis industrial programs in most transition countries, except for Slovenia and Estonia, which have reorganised swiftly through the channels of foreign competitiveness. Statistically speaking, this process induces a false signal of deindustrialisation, because in fact it means a decrease in absolute terms of the added value in the industry and business services and the withdrawal of the labour force towards agriculture and low added value services – retail commerce, for instance, simultaneously with the decrease of GDP, or even with a *negative reallocation* in industry (the decrease of the added value in industry due to the decrease of product value and price, although the business services can still achieve de same added value, but with a decreasing GDP). The mix of instruments used by these countries included measures similar with the ones adopted by EU15 countries, although with a certain delay and with different shares: stimulating the FDI, updating the technologies and supporting the SMEs.

In 1995, however, the trends of a decreasing share of the agriculture and retail commerce were clearly visible, in favour of an increasing share of the business services and of the public services. This trend continued quite linearly after the moment of accession. Over the last years, in all EU8 countries, the added value in real terms was growing rapidly, but the price indices of the added value in the industry were increasing. In this case, there is a question not yet answered: why do the business services display such a slow capacity of structural convergence, despite their particular potential of growth? In 2005, the added value per capita in EU8 countries ranged between 18% and 50% of the equivalent average value in EU15 countries, the added value in the manufacturing industry ranged between 15% and 75%, while the added value in the business services ranged between 9% and 23%.

The explanation resides in the structural differences within the manufacturing industry (an industrial specialization towards branches with low requirements of business services), in the prevalent model of business which internalizes the business services and in the externalization by the multinationals from the manufacturing industry of EU8 of certain services towards their headquarters. Also, there may be a logical delay in the development of these services, which follow the stabilisation of the industrial structure. Anyhow, we expect these countries to consider, through the national instruments, the alternative of an American-type of approaching the industrial policy, where there is no distinction made between the actual branches of the industry and the business services.

***The EU8 countries proved a remarkable flexibility in adopting the European trends of industrial policy, clearly visible particularly after 1995/1998.*** We can notice that the need for an industrial policy also appeared both in the EU15 countries and in the EU8 states, due to the mutations in the structures of property – in the case of EU15 it was the wave of merging and acquisitions which marked the onset of globalization (cf. Sharp (2003)); in the case of EU8 it was the transfer of the production capacities from state property to private property. Both contexts raised the need to redefine the position of the state towards the market and of the concept of national interest; the initial answer was the extreme liberalism, replaced

subsequently by rather distorting, then exhaustive horizontal policies, only to reconsider eventually the active industrial policies. In fact, an interval of just 10 years separates the challenges which confronted the EU15 countries of the ones which confronted the EU8 countries. The major success of the ex-communist countries was that they needed just 10 years (1990-2000) to go through a stage, while the EU15 countries needed about 20 years (1980-2000) to go through the same stage.

The transitory recession of the early 90s was met by the EU8 governments with the decision to adopt the idea of the “Washington consensus”, hoping that the market will balance back their economy - Biesbrouck and Jackson (1995)<sup>11</sup>. These principles of policy were also understood as preconditions of integration within the OECD and thereafter within the EU. However, the EU8 governments were soon forced to relax the liberalist policies<sup>12</sup>, by the need to reorganise the enterprises generating losses before they were privatized. The industrial policy promoted by *Hungary* started from a neo-liberal approach, in the early 90s; it shifted to policies designed to cope with the crisis situations between 1992 and 1995<sup>13</sup> and acquired a strategic character between 1995 and 1998. *Poland* adopted a clear industrial policy only after September 1993. In the *Czech Republic* and in *Slovakia*, the efforts of demonopolization and reorganisation started at some point during 1990-1992. In fact, the Czech government was the only one which, even in the early years of the 90s, departed openly from the dominant neo-liberal trends of the region. Elements of implicit industrial policy could be observed in the legislation of competition in countries such as Hungary, Slovenia or Romania, which included exceptions from the strict regulation of the cartels, in the situations when they looked favourable to the increase of the national economy’s competitiveness.

During the negotiations for accession, the chapter of industrial policy was opened by the EU8 countries during 1998-2000, period in which the industrial policy encouraged by the EU focused on the concepts of establishing a favourable environment for the enterprises, of the legal and institutional structure for the permanent training of the labour force and of the adoption of advanced technologies. Chapter 15 of negotiation<sup>14</sup>, *Industrial Policy*, doesn’t involve any transposition of European directives in legislative papers and doesn’t require special measures of implementation. This part of the *acquis* consists only in guidelines on stimulating the competitiveness, both at the horizontal level, and at the sector level, without being legal obligations<sup>15</sup>. In fact, the candidate countries were asked to develop strategies of industrial policy and of reorganisation which allow evaluating how much are these national industrial policies are in agreement with the principles formulated by the Council Directive 96/413/E. These elements, particularly under the conditions in which the open method of coordination in the field of industrial policy had not yet been introduced, were rather easy to negotiate (with the notable exception of Czechia) and were finalised by closing this chapter without transitory arrangements.

However, this doesn’t mean that the national industrial policies are implemented in these countries in perfect agreement with the ones applied in EU15 area. First, one must note that this chapter of negotiation doesn’t approach all the instruments of industrial policy. These are

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<sup>11</sup> W. Biesbrouck și M. Jackson (ed.), *Marketization, Restructuring and Competition in Transition Countries of Central and Eastern Europe*, LICOS-Avebury: Leuven, pp. 121–162, 1995.

<sup>12</sup> Throughout this chapter, the description of the national policies in EU8 countries is that from Török (2007).

<sup>13</sup> At the beginning of 1994, the Hungarian government designed initially 12 companies in the mechanics industry, production of aluminium, fertilizers, rubber and glass (their number increased subsequently), which were reorganized and privatized in a state of emergency.

<sup>14</sup> Cf. <http://ec.europa.eu/enlargement>.

<sup>15</sup> The few provisions based on the CECO Treaty, included initially in this chapter of negotiation, are no longer applicable because the treaty expired in 2002.

spread through several other chapters, the most noteworthy being those concerning the free circulation of goods, competition and the state aid, occupation and social policies, the enterprise policy, etc. (the most edifying example is the chapter *Competition*). In fact, the industrial policy of EU8 countries changed gradually after 1995, as it became clear that, starting with the Maastricht Treaty, the policy of competition in the EU is the code name of the industrial policy (Török, 2007). The process of convergence of the policies of competition in EU8 countries was different, however, than that of the EU15 countries. More precisely, while the convergence of the policy of competition in EU15 countries was an evolutive process of learning and mutual harmonization, a continuous pressure was put on the candidate countries for the direct and full transposition of the *acquis*. The *White Chart of the European Enlargement* (1995)<sup>16</sup> imposes a more strict compliance with EU rules for the accession countries than for the countries that are already EU members: for instance, the Chart requires not only the adoption of EU rules, but also of the EU casuistic, which is not required to the EU15 countries (Sharp, 2003). On the other hand, the chapter *Competition* stipulates transitory arrangements which act as effective instruments of industrial policy aimed to meet the concrete needs of these countries<sup>17</sup>; the arrangements were also valid when Romania negotiated this chapter.

**Table 1.2: Synthesis of the transitory arrangements included in the negotiation chapter 6, *Competition***

Country	Transitional arrangements
Czech Republic	Restructuring of the steel industry to be completed by the end of 2006
Hungary	Phase-out of incompatible fiscal aid for SMEs by the end of 2011 Conversion of incompatible fiscal aid for large companies into regional investment aid; the aid will be limited to a maximum share of the eligible investment costs according to the date and the industry of investment Phase-out of incompatible fiscal aid for off-shore companies by the end of 2005 Phase-out of incompatible fiscal aid granted by local authorities by the end of 2007
Poland	Phase-out of incompatible fiscal aid for small enterprises by the end of 2011 (by the end of 2010 for medium sized enterprises) Conversion of incompatible fiscal aid for large companies into regional investment aid; the aid will be limited to a maximum share of the eligible investment costs according to the date and the industry of investment With regard to state aid to environmental protection, transitional arrangement agreed for investments that relate to standards for which a transitional period has been granted under the Chapter Environment will be eliminated until 2010 (October 2007 for selected cases) Restructuring of the steel industry to be completed by 31 December 2006.

<sup>16</sup> [http://www.europarl.europa.eu/enlargement/index\\_en.htm](http://www.europarl.europa.eu/enlargement/index_en.htm) .

<sup>17</sup> This approach can have positive implications for the EU8 countries. The institutional system built from the beginning in these countries on the principles of the European policy of competition may become more efficient in managing the new industrial policy even than in EU15 countries.



Slovakia	Conversion of incompatible fiscal aid to one beneficiary in the motorvehicle manufacturing sector into regional investment aid; the aid will be limited to a maximum of share of the eligible investment costs.  Incompatible fiscal aid to one beneficiary in the steel sector to be discontinued at the end of 2009 at the latest.
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Source: <http://ec.europa.eu/enlargement> .

As shown above, the main candidate countries have successfully negotiated to continue using for a given period fiscal instruments of state aid nonconforming with the strictly horizontal approach strongly promoted at that time by the EU. This attitude is justified – these are sectors either crucial for the national economy at that particular moment (for instance, the automobile industry, brought to these countries with a range of instruments used to attract direct foreign investments which, in all cases, was the main drive for the industrial reorganization and modernization), or sectors which by definition are much more difficult to reorganise and which entail economic and social costs (for instance, the steel industry). This “two-stage industrial integration” successfully smoothed in many cases to the negative effects of transition.

Another relevant example is the state aid policy and its application at the European level. Only in 2004, 61 billion Euro, 0.6% of EU15 GDP, have been spent as state aid, amount in excess of the GDP of the smallest 8 EU countries. The structural funds also represent about 50 billion Euro each year (at 2004 prices) over 2007-2013. Thus, the state aid represented a valuable instrument of industrial policy<sup>18</sup>. During the pre-accession period (2000-2003), most EU8 countries have granted state aid in a share higher than the EU15 average. In all 10 states which joined the EU in 2004, the average state aid granted during the pre-accession period represented 1.42% of the GDP, much more than the EU15 average (0.4% of the GDP). However, if we exclude certain schemes which are discontinued at the moment of accession or immediately after, the average state aid decreases to 0.67% of the GDP<sup>19</sup>, although considerable differences exist between the individual countries. The Czech Republic holds the highest share, with 2.80%<sup>20</sup> of the GDP at accession, while the Baltic states rated the lowest shares (Estonia – 0.11%; Lithuania – 0.24% and Latvia – 0.26%; at the moment of accession, Hungary and Slovenia were close to EU15 average)<sup>21</sup>.

***Despite the accelerated approach of the trends of industrial policy from the EU8 countries to those of the EU15 countries starting with 2000, important differences between EU15 and EU8 countries still existed until the moment of accession and may still be identified in the present days.*** In general, from the launching of the Lisbon Strategy, we may consider that de EU25 countries run along about the same trajectory of industrial policy. One must not overlook, however, aspects which differentiated and still differentiate after the accession, both the EU8 block from EU15, and the countries included here in the EU8 block, between them.<sup>22</sup>

<sup>18</sup> Steve Fothergill, *EU State Aid Rules: How the European Union is setting the framework for member states' own regional policies*, Centre for Regional Economic and Social Research, Sheffield Hallam University, UK <http://www.regional-studies-assoc.ac.uk/events/leuven06/fothergill.pdf> .

<sup>19</sup> [http://ec.europa.eu/comm/competition/state\\_aid/scoreboard/2004/autumn\\_en.pdf](http://ec.europa.eu/comm/competition/state_aid/scoreboard/2004/autumn_en.pdf) .

<sup>20</sup> If from this calculation we exclude the funds invested for banking reorganisation, the share of the state aid within the GDP decreases to 0.47% for Czechia. Considering, however, the mechanism by which the financing of the distorting industrial policies of the Czech Republic was implemented largely through the banking institutions, the inclusion of these funds in the category of the state aid is justified.

<sup>21</sup> [http://ec.europa.eu/comm/competition/state\\_aid/scoreboard/2004/autumn\\_en.pdf](http://ec.europa.eu/comm/competition/state_aid/scoreboard/2004/autumn_en.pdf) .

<sup>22</sup> Sharp (2003) reviews the lessons to be learned by EU8 countries from EU15 countries experience in using the main instruments of industrial policy. Many of these strategic points were actually followed by EU8 countries with satisfactory results.

There is no doubt that the experience of EU15 and the process of its transfer were efficient in minimizing the adverse effects of transition, integration and convergence. The industrial policies promoted by EU8 countries after 2000 are characterized by changes of the approach and of the modernized instruments. The real contribution of them to the achievement of the convergence objectives is, nonetheless, difficult to assess (Török, 2007) and it varies between countries.

In Hungary<sup>23</sup>, the industrial policy turned spectacularly towards active policies in 2000, by the elaboration and implementation of the *Szécheny Plan*. The success of this initiative, which consisted in RDI programs and in a substantial subsidization of the SMEs (according to designs not conforming to EU rules), was due largely to the pre-existing conditions of the Hungarian political landscape which, even from the mid 90s, had already introduced different functional instruments to promote innovation, support the SMEs and attract foreign direct investments. Other success factors were the stress on the technological development<sup>24</sup> and the trust of the local enterprises in the decision of the government to promote active policies, trust induced through a successful marketing of the *Szécheny Plan*. The *Szécheny Plan* was discontinued in 2002, but it could be found largely in two industrial programs which followed it:

- The “*Széchenyi Program for enterprise development*”, which consists in preferential lines of credit for the national companies;
- The *Intelligent Hungary*, which promotes two innovative instruments: fiscal credits<sup>25</sup> and the possibility of the enterprises to use tax exemption as resources for investment.

A truly innovative instrument was the “simplified business tax”, introduced in 2003, which replaces, for the enterprises under a certain turnover, the tax on profit, VAT and several cumulated taxes (except the payment of social insurance). The main benefit for the SMEs is the simplification of the calculation for the taxation basis<sup>26</sup>. Furthermore, parts of the fiscal facilities which are incompatible with the principles promoted by the EU are maintained as result of the negotiations for accession.

In Poland<sup>27</sup>, the reorientation of the industrial policies also took place in 2000. This change consisted in distancing from the policies of “selection and support of the champions”<sup>28</sup> (policy implemented by the Polish authorities between 1993 and 2000), shifting to horizontal policies based on SMEs stimulation and on establishing the conditions for the free functioning of the market economy. Before 2000, the main instruments of industrial policy were of fiscal nature: lower taxes for the new companies and for those investing in disfavored areas<sup>29</sup> or in areas

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<sup>23</sup> Throughout this chapter, the description of the national policies in EU8 countries is that from Török (2007).

<sup>24</sup> The active support of the technological development in Hungary relied mainly on the innovative instruments promoted by OMF (the governmental agency for the promotion of the technological development), which included subsidies for the establishment of networks of innovators and research-production interfaces (for instance, the “Integrator” design introduced in 1999), cofinancing of the research centres established by the multinational companies from Hungary, initiative which attracted in Hungary research capacities of prestigious companies such as: AUDI, Nokia, or Knorr-Bremse.

<sup>25</sup> This time in agreement with EU regulations.

<sup>26</sup> This type of taxation was acknowledged as being in agreement with EU regulations on February 23, 2005. At that moment, almost 20% of the Hungarian SMEs had joined this project which had a positive contribution to the budget (Török (2007).

<sup>27</sup> Throughout this chapter, the description of the national policies in EU8 countries is that from Török (2007).

<sup>28</sup> Török (2007) calls the policies implemented in Poland “selection of potential champions” because this was the original idea of some years ago. In a few years, the policy of subsidies became a salvaging instrument for the companies with low chances of survival and generating losses. This mutation was the effect of the lobby from the energy and defence industries.

<sup>29</sup> Measure which became inapplicable after accession into the EU.

with high unemployment rates. The most discretionary component of these fiscal instruments was, however, the delay for indefinite terms of the payment for the social insurances, allowed by the Polish government to some enterprises with very large losses. The break from the trends of 2000 was important but incomplete. If the volume of the direct subsidies decreased continuously and numerous horizontal measures started to be implemented<sup>30</sup>, the Polish industrial policy continued to be represented indirectly by fiscal instruments and the process of reorganizing the state companies producing losses is not yet, even today, complete. The institutional structure which manages the industrial policies is clearly separated: the Ministry of Finance is conducting currently the reform of the fiscal policy, the Agency for Entrepreneurship Development is responsible for SME support, while the Treasury is responsible of the enterprises existing in the state patrimony.

The political changes of 2005 caused, among other, a redefinition of the industrial policies. Privatization, as instrument of industrial policy, was in general abandoned and a new strategic document was elaborated, which is the chapter of competitiveness from the National Development Plan for 2007-2013. The new strategy focuses on stimulating enterprise competitiveness, job creation and higher RDI expenditure. The stimulation of the inflow of direct foreign investments remains a priority for the Polish policy.

The *Czech Republic*<sup>31</sup> is probably the only country in which the political turn, noticed after 2000 in most EU8 countries, didn't take place yet. Furthermore, it is the only country which promoted during the mid 90s discriminatory industrial policies, such as the ad-hoc subsidies, debt exemption, preferential credits. Officially, the industrial policy promoted by the government was rather inactive, the responsibility of these measures being transferred to different satellite entities, mainly financial-banking units such as *Konsolidační banka* and *Česka konsolidační agentura*, or to governmental organizations such as the Czech Financing Agency or the Fund of State Assets (a kind of privatization agency). This strategy was completed by the relaxation of certain stipulations from the policy of competition<sup>32</sup>. The particular situation of Czechia is complicated by the existence of very strong unions and by the presence of sectors such as airplane construction, where Czechia has tradition and know-how, but with an unclear international situation.

*Slovakia* achieved a remarkable success in the reorganization and reorientation of the industrial policies in the 90s, particularly if we consider the unfavorable conditions under which this process started. Slovakia inherited most of the losses-generating companies from the former Czechoslovakia, the very capacity of functioning of its economy being questionable. The situation was worsened further by the early and politically managed privatization. Finally, the Slovak economy benefited from the fact that the major macro-economic reforms coincided with the application of some industrial policies. For instance, the Slovak industrial policy turned horizontal starting with 1998, as part of the negotiations for accession. This position was reflected in fundamental reforms, such as the law of privatization from 1999, the fiscal reform of 2003 or the set of measures stimulating the, which was from

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<sup>30</sup> These measures include: simplification of the bureaucratic barriers for the entry/exit of the companies from the market, simplification of the fiscal regulations for the SMEs, subsidizing the risk capitals, service of export marketing, etc.

<sup>32</sup> The 2003 EU Monitoring Report required Czechia (as well as Slovakia and Poland) to reorganise the steel industry using instruments of industrial policy in agreements with EU principles. This aspect was a subject of subsequent negotiation and benefited of transitory arrangements. Before the accession, the Czech Republic undertook to maintain the subsidies for the steel industry only with the purpose to increase the quality of the production, but these commitments were assessed as not being fulfilled at the August 2005 evaluation.

the beginning in agreement with EU regulations. Thus, Slovakia is now among the EU8 countries with the lowest level of subsidies (CE, (2006)). The Slovak government focused on the attraction of foreign direct investments by reducing the costs with the labor force, done by introducing a fixed rate (19%) of the tax on income and by a comprehensive reform of the system of social benefits. The logic followed by the Slovak policy was to encourage the modernization of the economy by encouraging the successive waves of foreign direct investments. This policy kept its coherence at least until de 2006 elections.

*Starting with 2005, the EU8 countries formulated active industrial policies, in parallel with the EU15 countries, but the specificity of these economies allowed different approaches and specific weights of the different instruments.* Only in 2005 can we speak of an intention of effective harmonization of the industrial policies within EU25 and their orientation towards active measures. The process advances slowly and still is in its early stages. The EU15 states too, still are in the stage of defining these policies. Furthermore, *the EU8 countries are still under the confusion of choosing a target pattern and a suitable vision for the economic-social specificity of each country*<sup>33</sup>.

In order to ensure a maximal efficiency of the policies, their formulation and implementation must take into account several main factors, such as the local industrial tradition, the structure of the state economy, the size and openness of the economy, the distance to the technological frontier in certain areas. Function of these, an industrial policy will be selected which favors the technological convergence, which stimulates the dissemination of technologies and services, which encourages the establishment of niches and lead markets or which aims to maintain the competitive advantages at the frontier. Of course, one can not speak of a direct causality between the industrial policies and the structural evolution that was considered (share of *high-tech* sectors, productivity, etc.), but rather of the interdependence between them.

*The EU8 countries, more than the EU15 countries, will have to focus on the elaboration of a vision of industrial development which to be coherent, stable and realist for the specific*

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33 Aiginger (2007) differentiates between four basic patterns existing in EU15:

- **The northern economies, small and open** – Sweden, Finland and Denmark – implement policies directed towards future competitiveness, investing heavily in research and education and very little as state aid. The labour market is little or moderately regulated. The logic result of these policies followed consistently is a high share of the industrial branches based on highly skilled staff.
- **The large continental economies** – Germany, France and Italy – invest more in supporting the national enterprises by stat aid, and the regulation level is medium towards high. France and Germany hold medium towards good positions in terms of expenditure for research, unlike Italy. But even France and Germany are behind the EU average in terms of increase of the expenditure for research, enrolment in programs of permanent training, rate of broadband penetration and ICT expenditure.
- **The small continental economies**– Belgium, the Netherlands and Austria – display a trend to have limited expenditure with the state aid. The main instruments used belong to the administrative regulations and less to economic regulations. These countries do not attract risk capital and have a quite low share of graduates from science and technology. They hold a median position in terms of research expenditure and a slightly better position in terms of information technology; they have a lower share of the sectors intensive consumers of advanced technology than expected at their level of GDP per capita.
- **The southern (peripheral) economies** – Spain, Portugal and Greece – spend much more for the state aid, have a stricter regulation and invest less in the future. They have a low share of highly sophisticated branches.

The analysis based on the methodology presented in the same study shows that, in real terms, the EU8 countries are heading for one of these patterns, as follows: the Baltic countries and Hungary towards the pattern of the northern economies; the Czech Republic and, to a lower degree, Slovenia towards the pattern of the small continental economies, while the other EU8 countries are rather captive of the pattern of the southern economies. The analysis of the currents strategies of development of these countries stress these trends for the future; in the case of the last category the strategy still is more reactive than proactive.

conditions of each country aside (the experience of Hungary, particularly, but that of Slovakia and Latvia<sup>34</sup> too, show that this thing is fundamental for the credibility and success of the policies in general and of the industrial policies in particular) and on draw the collaboration of all the parties interested in the implementation of this vision (Sharp (2003)). The internal coherence of this vision is particularly important. As highlighted by the European Commission Recommendations for granting structural funds<sup>35</sup>, all EU countries must create a synergy between the policies of cohesion, the research policies and those intended to increase the competitiveness. Given the still fast structural mutations from these countries, the synergy between policies is more difficult to achieve, but much more important.

It is clear that these countries will align to the general European trends in this field. The question is which could actually be the evolution of the industrial policy in EU8 countries, compared to EU15 countries, and how these countries will try to speed up convergence and to explore potential competitive advantages.

Within this context we expect that the EU8 countries will perform periodically analyses of competitiveness<sup>36</sup> and exercises of technological forecast<sup>37</sup> so as to decide how to position towards the European reality. It is interesting to observe that, although the European Commission elaborates periodical reports on the promoted economic measures<sup>38</sup>, there are no instruments which to monitor the implementation of the new industrial policy at the national level. However, the convergence reports and the documents elaborated during the monitoring of the Lisbon Strategy will continue to cover the areas relevant for the industrial policies of each member state.

### **1.3 Integration of the industrial policy within EU policies**

Given the European treaties and the benefits of the single market, the member states are increasingly involved in the construction of this competitive basis. This implies undertaking efforts to observe certain objectives or to implement rigorously certain policies. Pelkmans (2006)<sup>39</sup> proposes a taxonomy of the policies bearing influence on the industrial development, as shown in Figure 1.2. Furthermore, the cited author makes a dichotomy between the policies decided at the European level and the ones decided at the national level, underlining the complementarity between them. The figure taken from the cited book covers largely the policies which bear a direct or indirect influence on the industry and on its development. In general, the impact of the measures promoted through the industrial policy of the EU is felt most at the level of the framework-policies, specific to the European construction, and the coercion instruments available at EU levels (except those related to framework policies) are few and with limited power. It is very important, therefore, concludes Pelkman, to consider this when confronted with the wealth of documents of position or analytical regarding the economic policy, the increase of competitiveness or the enterprise policies. Most of these documents develop analytical exercises and give recommendations, but they are brief and

<sup>34</sup> The case of Latvia is not discussed here, but it is a very interesting example of coherent strategy of development and encouragement of the traditional industrial sectors, in which the country has competitive advantages (for instance the timber industry) (Török (2007))

<sup>35</sup> [http://ec.europa.eu/regional\\_policy/sources/docoffic/2007/osc/l\\_29120061021en00110032.pdf](http://ec.europa.eu/regional_policy/sources/docoffic/2007/osc/l_29120061021en00110032.pdf)

<sup>36</sup> For example, such as the analysis of the European Commission, *European Industry: A Sectoral Overview Technical Update*, 2006,

[http://ec.europa.eu/enterprise/enterprise\\_policy/industry/doc/sec\\_overview\\_update06.pdf](http://ec.europa.eu/enterprise/enterprise_policy/industry/doc/sec_overview_update06.pdf)

<sup>37</sup> The first exercises of technological forecast in EU8 countries were done in Hungary in the early 90s, but were not actually implemented in the promoted policies (Török (2007)).

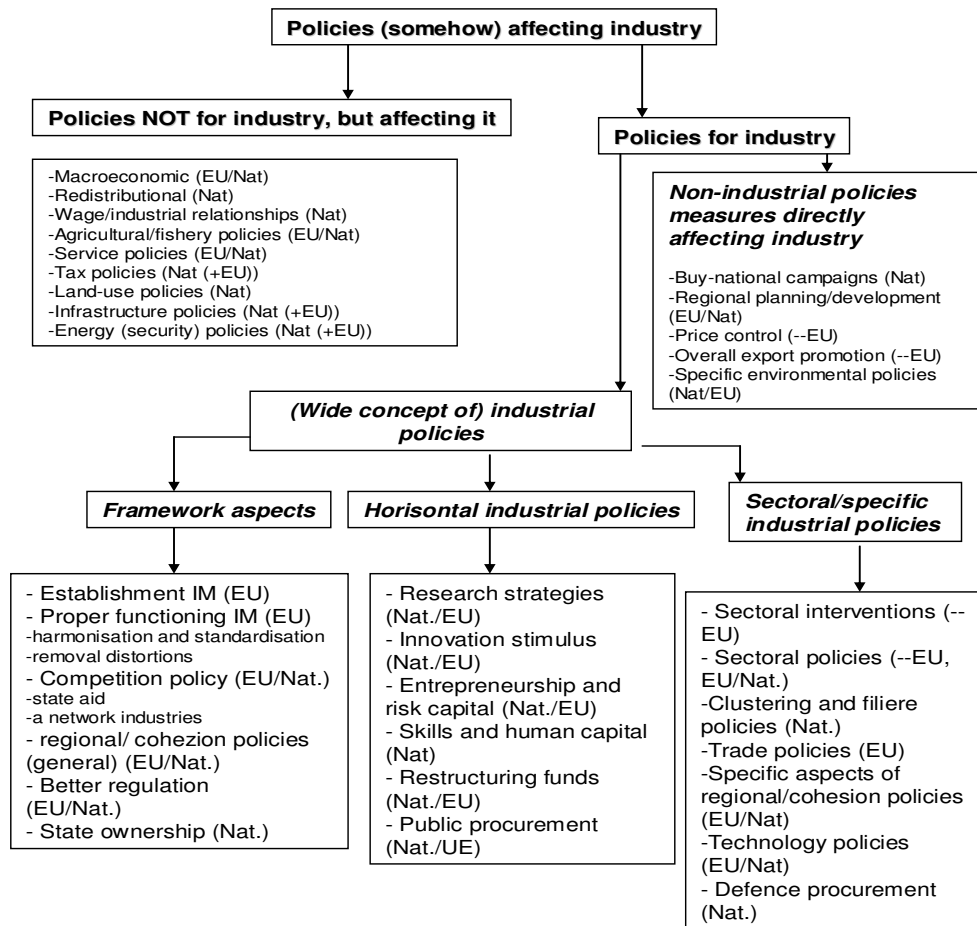
<sup>38</sup> The last such report can be found at

[http://ec.europa.eu/enterprise/enterprise\\_policy/industry/doc/mtr\\_in\\_pol\\_en.pdf](http://ec.europa.eu/enterprise/enterprise_policy/industry/doc/mtr_in_pol_en.pdf)

<sup>39</sup> Pelkmans, J. (2006), "European Industrial Policy", in Bianchi, P and Labory, S. (2006), *International Handbook of Industrial Policy*, E.Elgar publishers.

rather lax in terms of elaborating concrete and coercive methods in which these recommendations are to be implemented. This approach can be seen as a direct consequence of approaching the industrial changes based on the free market and, at the same time, mean an explicit choice of the European decision-makers to keep away from the potential attributions of a superstate authority and to observe as much as possible the principle of subsidiarity.

Figure 1.2 National and EU competencies in enforcing the instruments of industrial policy



Source: Pelkmans (2006)

Concretely, the objectives of the industrial policy can be achieved by conferring with the member states and, when necessary, by coordinating their actions, together with or at the initiative of the European Commission; the correlation of the industrial policies with other community policies; measures to support the actions implemented in the member states; unanimous decisions of the European Commission and after consulting the European Parliament and the Economic and Social Council. The unanimity required in these cases denotes the reservation of the member states to give up even partially the national character of the industrial policy in favour of a common policy. Thus, the most substantial part of the industrial policy in the narrow meaning, are implemented at the national level<sup>40</sup>. However, the measures of industrial policy are influenced, conditioned and even interlocked with other

<sup>40</sup> <http://www.europedia.moussis.eu>.

common EU (economic) policies, such as: policy of competition, construction of the single market, research and development, education, foreign trade and sustainable development.

The new Lisbon Strategy creates a context which is favourable to the interaction and harmonization of the national and community levels of political decision because the recommendations adopted by the European Council include recommendations of industrial policies, therefore the measures taken at the national level will reflect in the periodical reports afferent to the Lisbon process. In certain cases, the European Commission collaborates with the member states, including in identifying and disseminating the best practices. Also, this approach will allow the Commission to integrate the national dimensions of the industrial policies within the general framework of the horizontal and vertical measures adopted by the EU. Currently, however, as shown by CE Communication COM(2007) 374, the actual corroboration between the industrial policies promoted at the European level and those promoted at the national level remains limited.

### **1.3.1 The new industrial policy: strengthening the sectoral preoccupations on the background of an integrated approach**

#### The new industrial policy: an integrated approach

In October 2005, by Communication COM(2005) 474<sup>41</sup>, after a detailed analysis of 27 sectors of the manufacturing industry from the Union, and within the context of the “Partnership for Growth and Occupation” of the Lisbon Strategy, the Commission has launched a new industrial policy which aimed to develop an environment more favourable to the development of the manufacturing industries. This communication included an Integrated Approach of the industrial policy, based both on horizontal programs and on sectoral initiatives. This policy was regarded as an important pillar of the Lisbon Strategy.

The Commission highlighted that this new approach doesn't mean the return to interventionist selective policies, but it is only intended to yield “more relevant, integrated and consensual” policies. This document of policy has just the role of completing the exiting framework of industrial policy by focusing on its actual application in each sector.

The new industrial policy is based on seven horizontal initiatives and on seven sectoral-specific initiatives.

*The horizontal initiatives include:*

- The initiative on the copyright an forgery;
- The establishment of a high level group on issues of competitiveness, energy and environment;
- Revision of the Strategy of access to the market to redirect it towards the sectors and markets with the highest potential gains of competitiveness;
- A new program to simplify the legislation;
- Improve the sectoral skills;
- Management of the structural changes in the manufacturing sector;
- An integrated European approach to industrial research and innovation.

*The sectoral-specific initiatives are:*

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<sup>41</sup> European Commission, *Implementing the Community Lisbon Programme: A Policy Framework to Strengthen EU Manufacturing - towards a more integrated approach for Industrial Policy*, COM(2005) 474 final, Brussels, October 2005.



- Establishment of a new forum of the pharmaceutical industry;
- Mid-term evaluation of the strategy on life sciences and biotechnology;
- A new high level, working group on the chemical and defence industries;
- European space program;
- A working group on ICT topics;
- Establishment of a dialogue on topics of mechanic engineering;
- Conduct a series of competitiveness surveys, including the ICT, food, fashion and design industries.

Mid-term evaluation (2007): „pro-activism” and orientation towards the SMEs

In 2007, the Commission published the “*Mid-term evaluation of the industrial policy. A contribution to the EU Strategy for Growth and Occupation*”, which evaluates the success of the Integrated Approach’s success two years after its introduction and which proposes new measures for the period 2007-2009. The goal of the industrial policy was broadened on this occasion becoming the: “Proactive creation of the framework suitable for enterprise development and for innovation, to make the EU an attractive place for industrial investments and job creation, given that most enterprises and SMEs”. The new insertions suggest a more active approach of the industrial policies and a special stress on SMEs requirements.

The horizontal initiatives highlighted by the new document on policy are:

- Simplification and improvement of the regulation environment and reduction of the administrative expenditure, which remains a top concern of the Commission, focusing on the areas of construction, statistics, health and safety, work relations etc. This initiative is extremely important to the SMEs.
- Introduction of initiatives which to stimulate innovation by other means (financial included) than those of the regulatory framework, with the purpose to create Lead markets for the innovating products (“initiative of the Lead market”).

**Box 1: Lead markets**

The lead market is the starting point for the dissemination of an innovation/technology. This market has the property of generating innovations with a high probability to be adopted by other markets. This property establishes a virtuous circle of innovation because it creates permanent incentives for innovation on the lead market. To become a lead market, a market must sum up several characteristics: high demand and innovating consumers; high quality standards; a flexible and stimulating framework for the producers and users of innovation, etc. The lead markets can be stimulated to emerge either by horizontal policies, or by active policies to stimulate the demand by public acquisitions, subsidies, etc. The active policies have the disadvantage of a handicap of information: it is impossible to know ex-ante which markets will become lead markets. An industrial policy which allocates actively financial support (through the policy of acquisitions, for instance): is the object of the rent-seeking phenomenon (the companies/sectors assign resources to direct resources towards them) and display the trend to favour the companies which already exist. Furthermore, a strong empirical result concerning the industrial policies is that the state is generally less able to withdraw from non-productive initiatives.

- Transform the European Knowledge Area into a network of world class clusters (the “cluster initiative”)
- A new initiative on the sustainable industrial policy to materialize in a Plan of action guided by three great principles: stimulate the development of energy-efficient, low C-emission technologies; establishment of a dynamic internal market; establishment of a global market for energy-efficient, low C-emission technologies, products and services;
- An initiative on the energy-intensive industries;
- Improve the access to resources and raw materials;
- Increase foreign competitiveness and the access to markets, regarded as crucial for the industrial performance of the EU (“initiative on competitiveness and market access”);
- Expand the role of the Commission as facilitator of exchanges of good practices by expanding its work of analysis (“initiative on the structural change”);
- Initiative for industries/services: monitoring and analysis of the impact of the services industry on the industrial competitiveness and to identify possible market failures.

The sectoral initiatives address the following sectors:

- Food (to materialize in a package of measures);
- Mechanics engineering (the ELECTRA initiative whose aim is to identify the main competitive challenges confronting the sector in the long run);
- Space (evaluate the necessity for an European regulatory framework to disseminate the data received from satellites; the GALILEO project; stimulate the allocation by mechanisms on the spectrum market, etc);
- Defense (development of the European Market for Defense Equipment; technological development; increase the global competitiveness);
- Security (establishment of the European Forum of Research and Innovation which to develop a Joint Agenda on Security);
- The sector of medicines, including the biotechnological products (modernization of the regulatory framework);
- Metallurgy and forestry (two communications).

**Horizontal policies in the sphere of foreign investments and state aid – EU15 versus EU8**

The main difference between the EU8 and EU15 countries with regard to the existence and efficiency of the industrial policies levers is in the role of the FDI, particularly important given the technological convergence and the rapid reform of the industrial sector of the EU8. This effect is much so favourable for the whole EU, as it generates less tension at the

occupation level. Thus, only limited effects have been estimated on the occupational level of the EU15, after the relocation of the multinational companies towards EU8 countries<sup>42</sup>.

The study of the European Commission cited earlier estimates that the risks of capital running out of the EU8 countries after accession were limited, because at the moment of accession these countries also had other factors of attraction besides the low costs, and the effects of income equalisation after the accession have already been felt. However, the European Commission encourages these countries to implement policies which to stabilise the presence of the FDI, mainly policies which to improve the quality of the innovation system. It is estimated (Török, 2007) that EU8 countries will attach, at least until 2012, particular importance to the attraction and maintenance of FDI on their national territory. The measures for FDI stabilisation in the area can be general measures which to improve the system of innovation recommended to all countries, with focus on different aspects, according to the national specificity and within the limits of the general EC recommendations. Measures can also be taken to stimulate the business services, whose quality is a factor attracting the FDI. In fact, although the fiscal facilities will continue to motivate the decisions to locate and relocate businesses, the governments promoting with priority the establishment of efficient networks will have the highest odds to maintain the FDI on the national territory beyond the period of validity of the granted facilities.

Furthermore, the stress on education, including by the education of demand, may contribute substantially to a more rapid technological convergence of these countries. That is why, comprehensive programs will be developed to improve the adequacy of the basic education and to attract a higher percentage of the population to programs of permanent education.

In the field of the state aid policy, an intensive exploitation is expected for the sectoral policies provided by the new vision and for the ones which remained at the level of the national competencies. The European Commission (1996)<sup>43</sup> encourages the use of state aids for four essential political priorities subsequently included in the Lisbon Strategy: environment, regional development, research-development and SMEs. In 2004, these goals represented, at EU25 level, 45.2% of the total state aid (14.1% for the environment, 13.1% for regional development, 9% for research-development and 9% for the SMEs)<sup>44</sup>. For 2007-2013, the European Commission stipulated an overall reorganisation of the state aid policy<sup>45</sup>. As mentioned in CE (2005)<sup>46</sup>, the two factors which lead to the restructuring of the state aid policy are: EU enlargement and the active industrial policies proposed as part of the Lisbon Strategy revigoration. For instance, the new set of acting rules<sup>47</sup> continues to favour the convergence of the new member states at the regional level. It is interesting to notice that EU8 countries have a degree of coverage up to 100%. In the case of Romania, all the regions meet the criteria for receiving regional state aids. These aids have a new component intended to encourage the start-up at the regional level. The aid for the large enterprises can only be given until 2010, if the regional relevance of the particular enterprise is documented. No doubt, the

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<sup>42</sup> These effects have been quantified for three countries: 1-1.5% of the total occupation for the Netherlands, 0.3% in Germany and 7% in Austria is lost due to this relocation.

[http://ec.europa.eu/economy\\_finance/publications/occasional\\_papers/2006/ocp24en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_papers/2006/ocp24en.pdf)

<sup>43</sup> Community Framework for State-Aid.

<sup>44</sup> Fothergill (2006).

<sup>45</sup> Actually, this is the most important difference between the set of structural regulations in force at the moment of EU8 accession, on the one hand, and the set for Romania and Bulgaria, on the other hand.

<sup>46</sup> DG Competition, *State Aid Action Plan. Less and better targeted state aid: a roadmap for state aid reform 2005-2009 (Consultation document)*, 2005,

[http://ec.europa.eu/comm/competition/state\\_aid/others/action\\_plan/saap\\_en.pdf](http://ec.europa.eu/comm/competition/state_aid/others/action_plan/saap_en.pdf)

<sup>47</sup> [http://ec.europa.eu/comm/competition/state\\_aid/regional/rag\\_summary\\_june\\_en.pdf](http://ec.europa.eu/comm/competition/state_aid/regional/rag_summary_june_en.pdf)

regional state aid will be converted into an important instrument of industrial policy, particularly in the EU8 countries.

As in the case of the state aid, there will be a concerted effort not just for the utilization with maximum efficiency of the Structural Funds and of the Cohesion Funds, but a broadening of the range of utilizations. According to Aiginger (2007b)<sup>48</sup>, one can even speak of a regionalization, to a certain degree, of the industrial policy due the results of the policy encouraging clusters. Often, at the regional level, the problem is simply reduced to the decision to finance the clusters of companies from certain sectors, which actually is a sectoral industrial policy. At the local level, the industrial policy is not discriminatory; on the contrary, it has the best odds to act in favour of the most efficient investments. This is why, throughout Europe, the stress of the regional policy will increasingly be of industrial policy-type. The EU8 countries will benefit, however, more, of Structural Funds, directed especially towards objectives of industrial policy. Even in the program period 2000-2006, there have been, within the Regional Structural Funds, lines of financing with a strong character of instrument of industrial policy (support for SMEs, entrepreneurship, occupation, research-development, etc.) For the period 2007-2013, the EC recommendations on the Cohesion Funds stress that the more decided targeting of the community goals of growth and occupation means structural mutations towards the knowledge-based economy, that is towards research and innovation, entrepreneurship and development of the human factor. The diversification and increase of the degree of sophistication of these instruments will make place for the creative and complex utilization of these resources.<sup>49</sup>

Among the framework measures, probably the EU8 countries, more than the EU15 countries will give special priority to the establishment of functional and dynamic networks of enterprises such as those established between the actors which manufacture highly complex products and between the producers of advanced technologies, on the one hand, and between them and the research centres. Britto (1998)<sup>50</sup> calls this type of networks “3 and 4-type networks”, in which the quality and context of the intra-industrial and industry-research collaboration have the highest effect on the rate of innovation. The attention paid to this aspect is particularly important to the EU8 countries, not just because it provides a fast technological convergence, but also because it promotes the modernization of economy performance, more so as in some of these countries there still is a need for a deep restructuring of the previous/existing patterns of business, based on planned networks and maintained alive by mutual paraeconomic benefits<sup>51</sup>.

Finally, there might be a possibility to negotiate the relaxation of the criteria of adopting active industrial policies (of the “fiscal competition” type), which to allow the fast convergence within the EU (Török (2007)) and a more important contribution to the overall performance of the Union. The 2005 change of EU25 industrial policy towards active policies is motivated by the ambition to match the economic performance of the United States. In this

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<sup>48</sup> K. Aiginger, *Industrial Policy: A dying Breed or a Re-emerging Phoenix*, Journal of Industrial Competitiveness and Trade, pp. 297-323, 2007.

<sup>49</sup> AN interesting example comes from the field of SME financing. Due to the JEREMIE initiative, some financial instruments supplied to the SMEs will have the possibility to be financed from the Cohesion Fund. The program is intended particularly for the risk capitals whose importance for innovative development has been recently acknowledged by the EU <http://www.eif.org/jeremie>.

<sup>50</sup> J. Britto, *Technological Diversity and Industrial Networks: An Analysis of the Modus Operandi of Co-Operative Arrangements*, SPRU Electronic Working Paper No 4, 1998. <http://www.sussex.ac.uk/Units/spru/publications/imprint/sewps/sewp04/sewp04.html>

<sup>51</sup> For varied and complex analyses of the situation of industrial network establishment and on the mutual influence between them and the European economic integration in the period following immediately after accession, go to <http://www.ssees.ac.uk/esrcwork.htm>

case, given the competencies recently acquired by the EU8 countries in the application of the active industrial policies, the new member states should benefit of such a relaxation in view of the inter-European convergence. Furthermore, it is not against all odds to witness, as Sharp (2003) recommended, even on the eve of accession, a strengthening of the business lobbies from EU8 countries at Brussels, with the view to promote directly their national interests and to warn on the concrete conditions and on the effect of the community policies on the business in EU8.

### **Impact of the integrated pollution control on the European industry competitiveness**

Directive 96/61/EC concerning the prevention and integrated control of pollution<sup>52</sup> (IPPC Directive) has the purpose to minimise the pollution at source “by the efficient utilization of the natural sources and by establishing an integrated EU system of licensing” (DG Enterprise<sup>53</sup>). It sets the licensing and control framework for the industrial installation of EU in industries such as production of energy, production and processing of metals, mineral industry, chemical industry, waste management and other activities such as paper production, hide tanning, milk processing, intensive animal production (Appendix I of the Directive provides a list of the targeted industries and activities). As of October 1999, IPPC Directive is applied to all new installations or to the installations undergoing significant alterations. The other installations will have to be licensed by October 2007. By this date over 60,000 installations will need IPPC licence to operate.

According to article 9(4) of IPPC Directive, the limits of emissions for the environmental permits “will be based on the Best Available Techniques (BAT) without prescribing the use of a technique or technology, but taking into consideration the technical characteristics of the surveyed installations, their geographical location and the local environmental conditions” and this is going to be determined for each member state. The BAT are defined in article 2(11) of the Directive as available techniques “developed on a scale which allows the implementation in relevant industrial sectors, under conditions of technical and economic viability, while taking into consideration the costs and advantages, (...) as long as they are reasonably available to the operator”.

The European IPPC Bureau organises the exchange of information on BAT between the member states and the industries targeted by the goal of the Directive and produces BAT reference documents called BREFS. Currently there are 27 adopted BREF documents and 6 more under finalization<sup>54</sup>. These documents are not legally compulsory, but the Member States are compelled to take the BREF standards into consideration when they set the conditions for issuing the environmental permits.

The Directive doesn't contain requirements on the stages of monitoring and inspecting the regulatory cycle. Due to these reasons, IPPC implementation differs among the Member States, with possible consequences on the competitiveness of certain EU facilities and industries (IFO, 2006)<sup>55</sup>

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<sup>52</sup> EC Directive 96/61/EC of September 24, 1996

<sup>53</sup> DG Enterprise, Environmental Aspects of enterprise policy, <http://ec.europa.eu/enterprise/environment>

<sup>54</sup> BREF documents and projects can be downloaded from: <http://eippcb.jrc.es/pages/FActivities.htm>

<sup>55</sup> *Assessment of different approaches to implementation of the IPPC Directive and their impacts on competitiveness, Final Report to the European Commission*, DG Environment, IFO Institute for Economic Research in collaboration with Carlo Bro Group, December 2006.

The potential impact on competitiveness has determined the Commission to conduct studies and consultations on this subject. *The Impact of BAT on the Competitiveness of European Industry* (Hitchens et al., 2001)<sup>56</sup> analyzed three industries: cement, cellulose and paper, and the nonferrous metals. Previous surveys on the impact of the environmental regulations on competitiveness in EU and the USA, cited by Hitchens et al. (2001), concluded that the impact is rather low, because the costs with the enforcement of the environmental standards are low compared to the total costs (less than 1%). Hitchens et al. (2001) compared the competitiveness of the companies which have adopted most BAT elements with the competitiveness of the companies which did not adopt BAT. The applied definition of competitiveness relied on the medium and long-term survival of the enterprises challenged with the requirement to implement BAT and to improve the environmental standards. The results of the survey have shown the BAT implementation did not decrease enterprise competitiveness at the national or international level with the caveat that the BAT enterprises had certain specific traits: new technologies, high performance, R&D, skilled workforce, etc. The vigorous implementation of the IPPC, therefore, could increase the implementation costs for non-BAT companies compared to BAT companies, part of these costs being the risk of closure (about 20%). The authors of the study recommended establishing realist and prudent scales for IPPC implementation for these companies. The 2001 study was conducted during an early stage of IPPC Directive implementation, and the authors declared that the impact of the Directive will depend largely on the way and speed of its implementation.

During the workshop *Economic consequences of the Integrated Pollution Prevention and Control Directive* hosted at Brussels by DG Enterprise in collaboration with DG Environment and with the European IPPC Office, the experts reviewed the criteria measuring the impact of BAT on the competitiveness of different sectors. *The conclusion was that there is no single formula to evaluate the impact of BAT on competitiveness, but that there are several economic factors which could help the industries and authorities to make a more coherent and transparent evaluation of the economic consequences of BAT introduction. A sectoral approach is needed in order to evaluate the impact of BAT on the economic viability and to prevent unlawful competition.* The experts have also identified 5 key economic criteria which could be applied to make a detailed analysis of the impact on an industrial sector:

- Market structure (elasticity of the demand which determines whether the costs could be transmitted to the consumer, the level of competition, the existence of substitutes, consumer concentration);
- Structure of the industry (age of the installation, size of the installations, duration of the equipment; type of technology; investment cycle, profit margins);
- Resistance (can the costs be absorbed by the industry? Which are enterprise liquidity and solvability? Which are the profit margins? Which are the effects of the competition both in the EU and outside it?)
- Cost of BAT as percentage of the total cost (Is the percentage reasonable? How must it be calculated: by unit, by production line, by company?);
- Speed of implementation (How fast can be BAT implemented? Which are the cycles of investments? Are the integrated measures under processing or at the end of the pipeline? Which are the planned routine closures? Is it a new installation or an existing one?)

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<sup>56</sup> Joint Research Centre, European Commission, *The Impact of BAT on the Competitiveness of European Industry*, EU Report 200133 EN, November 2001

Furthermore, the synchronization between BAT introduction and the investment cycle is very important, the best moment for the introduction of the environmental standards being that of retechnologisation. Therefore, the industries with longer cycles of investments are less flexible in synchronizing the environmental investments with the ones for retechnologisation. The SMEs are particularly vulnerable to BAT implementation and the impact analysis on the competitiveness depends crucially on the existence of updated and credible data on the costs.

There also are cases in which during BAT implementation the detailed analysis of the economic viability can be skipped, such as:

- If there is consensus between the experts (the ones included in the Technical Working Group);
- The particular BAT is applied to several installations throughout the EU;
- The BAT has a positive yield on the investment (shown as a current positive net value or as the period of recovery).

Recently, a new study has been published (IFO, 2006) on IPPC effect on competitiveness, which focuses on two industries: the steel industry and the production of domestic glass. The study separates the implementation of IPPC Directive in three successive steps: 1) legal transposition of the Directive in the legislation of the member states; 2) their application by national regulation; 3) the process of issuing the environmental licenses. The study focuses on the evaluation of the economic implications of the process of issuing the environmental licenses. The concept of competitiveness is approximated by a basket of indicators. The study also introduces an analysis of the institutional context of Directive implementation in the surveyed countries and, from the prism of this analysis, reaches some interesting conclusions. The first one is that due to the lack of evaluation technologies the authorities use in many cases the economic viability at the enterprise level and not at sectoral level, as the Directive requires. Furthermore, different levels of stringency of the implementation may generate distortions of the competition, the more drastic regulation bearing adversely the competitiveness of the companies directly affected by these. *The strongest impact of IPPC is felt in those countries in which implementation required a fundamental restructuring of the environmental standards.* The differences of frequency, regularity, consistency and quality of the inspections may also generate distortions of the competitiveness among countries. Based on the sectoral analysis, the study identifies transient increases of costs in the steel producing industries in the countries in which the licensing procedures changed substantially, particularly for the export-oriented producers which compete exclusively based on prices with producers from countries with softer licensing procedures. The authors didn't identify, however, long-term effects on competitiveness compared to EU or non-EU producers. The age of the company has been identified, in the case of the steel industry, as factor facilitating the efficient adoption of IPPC. No evidence was found that the small producers should bear disproportionate costs generated by IPPC compared to the large producers. In certain cases, BAT investments reportedly yielded increases of the work efficiency and productivity.

The authors have also identifies several factors which facilitate IPPC implementation in the steel industry:

- Cooperative relation with the authorities;
- Availability of BREF as reference handbook;
- “on stop” licensing;

- Synchronization of BREF implementation with the own efforts of the operator to improve the technological performance of the enterprise (extremely important)

In conclusion, the evaluation of IPPC Directive impact on the competitiveness of the affected enterprises and industries is still sporadic and the incomplete methodologies differ among the countries. For the priority sectors in the 2007 “Mid-term evaluation“ (food industry, mechanical engineering industry, defence industry, pharmaceuticals industry, metal industry, forestry industry) there is not impact analysis of BAT on the competitiveness, except for the steel industry. However, a framework for analysis has been outlined and the sectoral studies can offer some general ideas on the effect of IPPC on competitiveness and on the way of implementing them more efficiently.

#### **1.4 Horizontal goals and priorities in EU industrial policies**

The question we are asking in this subchapter is: how do the common and national industrial policies link to the general goals of the European construction. Of course, the common industrial policy must ensure the contribution of other common policies to an increased competitiveness of the entire European economy or, reciprocally, the industrial policies, common or national, must not contradict the economic and social goals of the European construction. We will refer subsequently in more detail to two economic goals and to the way in which the common industrial policy is linked to their achievement:

- the establishment of the single market (goal proposed by the Treaties for the establishment of the European Union);
- a sustainable and competitive European economy by innovation (goal set by the Lisbon Strategy).

##### *The industrial policy and the establishment of the single market*

The framework policies, as defined by Pelkmans (2006), originate simply from the essence of the European Union. The understanding of the concept of single market and of the logic of the process of its establishment is essential to the understanding of the nature, objective and potential capacities of the European industrial policy. The establishment and functioning of the single market are goals set by the very European treaties. What the treaties call the “establishment of the single market” actually means the free circulation, of the productive capital included. To be able to do this, similar legislation and functional protocols for mutual acknowledgement have to be adopted. Thus, the goals of “establishing the single market” and of “providing for its functioning” go hand in hand. Furthermore, the efficient functioning of the single market involves the strict compliance of a common policy of competition. There are few aspects inherent to the functioning of the single market available today to the member states: they relate to the labour force market and to the lack of common licensing procedures<sup>57</sup>. Other punctual cases relate to transitional arrangements, to the lack of certain common standards or to the slow liberalization of the network industries.

The degree of practical harmonization of the legislation, precondition for an efficient functioning of the single internal market, is monitored carefully within the initiative of increasing the quality of the legislative system. The new routine to submit all the large scale proposals of the European Commission to an evaluation in terms of acting legislation will permanently bring to the attention the issue of the legislative harmonization (Pelkmans

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<sup>57</sup> Pelkmans (2006).



(2006). Therefore, the coherence between the industrial policies and the other common policies is ensured by the mandatory character of observing the framework policies deriving from the treaties for the establishment of the European Union.

*The industrial policy, a sustainable and competitive European economy by innovation*

Although the interest of the industrial policy started to shift towards the horizontal goals as early as from the Bangeman Communication, the stress on competitiveness by innovation was set by the Lisbon Strategy, the first attempt to put the European social pattern and the goals of economic growth and competitiveness within a single strategic document. Unlike the framework policies, the industrial policies associated to the Lisbon Strategy are not mandatory, but they are promoted at the European level by financing programs, and the progress is monitored by national surveys. Although the European Commission elaborates periodical reports regarding the economic measures it promotes<sup>58</sup>, there are no monitoring instruments which to survey the implementation of the new industrial policy at the national level. However, the convergence reports and the documents elaborated during the monitoring of the Lisbon Strategy will cover and will continue to cover the areas relevant to the industrial policies in each member state.

Within the same framework created by the Lisbon Strategy (growth and occupation), the declarations of intent and the political commitments on the implementation of the new industrial policy are presented in the series of *National Programs of Reform 2005-2008*<sup>59</sup>. The evaluation of the way these strategies were implemented in 2006 has already been done, and an overall evaluation of the economic success of the transition is done by the European Commission in its study *Two years from integration – an economic success*<sup>60</sup>. The industrial policy is analysed every 6 months using the inputs from the member states. The Lisbon Strategy is implemented through the so-called “open method of coordination”, which involves the voluntary coordination of the member states and whose instruments are the recommendations, the monitoring indicators, the identification and publication of the good practices. The main active instruments of common industrial policy of the Lisbon Strategy are essentially financing schemes (except for the environmental policies, which are mandatory). Thus:

- **Competitiveness and Innovation Programme** (CIP, 2007 to 2013<sup>61</sup>) intends to stimulate the industrial competitiveness, particularly that of the SMEs; to promote all types of innovation, including the eco-innovation; to accelerate the development of a sustainable, innovative and inclusive information society; to promote energy efficiency and the use of alternative resources in all sectors, energy included. These goals are to be achieved by the implementation of three programs:

- (a) The program of entrepreneurship and innovation;
- (b) The program of support for ICT development;
- (c) The European Program for Energy Intelligence.

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<sup>58</sup> The last such report can be found at:

[http://ec.europa.eu/enterprise/enterprise\\_policy/industry/doc/mtr\\_in\\_pol\\_en.pdf](http://ec.europa.eu/enterprise/enterprise_policy/industry/doc/mtr_in_pol_en.pdf) .

<sup>59</sup> [http://ec.europa.eu/growthandjobs/key/nrp2005-2008\\_en.htm](http://ec.europa.eu/growthandjobs/key/nrp2005-2008_en.htm)

<sup>60</sup> <http://www.europa.eu/scadplus/leg/en/lvb/e50026.htm>

<sup>61</sup> Decision No 1639/2006/EC of the European Parliament, *Competitiveness and Innovation Framework Programme (2007 to 2013)*, 24 October 2006.

- **Seventh Framework Programme** (FP7, 2007 to 2013<sup>62</sup>), although it was not conceived initially as part of the Lisbon Strategy<sup>63</sup>, the seventh framework programme is now subordinated to its goals. Therefore, the main goal of FP7 is to make the EU research area the worldwide dominant research area. FP7 has four types of activities:

- a) Trans-national cooperation in certain politically-defined areas (Programme *Cooperation*);
- b) Support for the research initiated by researcher communities (Programme *Ideas*);
- c) Support for the individual researchers (Programme *People*);
- d) Support for the development of the research capacities (Programme *Capacities*);
- e) SMEs development within a knowledge-based economy (complementary to CIP);
- f) Increase of regional competitiveness (Programme *Areas of Knowledge*).

Other similar programs and initiatives subordinated to the Lisbon Strategy with a similar effect on the instruments of industrial policy are the policies for the improvement of workforce skills<sup>64</sup> or the environmental policies<sup>65</sup>.

Essentially, the industrial policies, both national and common, are a combination of mandatory framework policies and horizontal policies, with limited attention for the sectoral policies. The widest range of possibilities in conceiving and implementing national industrial policies lies with the horizontal policies afferent to the Lisbon Strategy. The fundamental goal of the industrial policy didn't change essentially from 1990 (the Bagenmann Communication) until now, but the industrial policy underwent changes of vision described in the previous subchapters, particularly after 2002. These changes influenced its goals, area and priorities. Table 1.3 shows briefly the evolution of the goals and priorities of the industrial policy after 1990. They are taken from the 2005 CE document of industrial policy, "*Implementation of the Lisbon Community Program: a political framework to strengthen the sector of the manufacturing industry – towards a more integrated approach of the industrial policy*" completed with the new initiatives introduced in the *Mid-term evaluation*.

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<sup>62</sup> Decision No 1982/2006/EC of the European Parliament and of the Council of 18 December 2006 concerning the Seventh Framework Programme of the European Community for research, technological development and demonstration activities (2007-2013)

<sup>63</sup> The Framework Programmes of research were created to answer the goals of Article 163 of CE Treaty, namely to contribute to the increase of competitiveness, to meet the research needs of other common policies and to establish the Common Research Area.

<sup>64</sup> <http://ec.europa.eu/enterprise/ict/policy/ict-skills.htm> a.i.

<sup>65</sup> *Thematic Strategy on Sustainable Use of Natural Resources; Background Document for Sustainable Industrial EssebntPolicy* – forthcoming beginning 2008

**Table 1.3: Goals and priorities of the industrial policy, 1990-2007**

<b>Main industrial policy documents</b>	<b>Main objective of industrial policy</b>	<b>Description</b>	<b>Priorities</b>
An Industrial Competitiveness Policy for the European Union (1994)	Aims to create the framework which to increase the performances of the enterprises and correct the market failures.	Mainly horizontal	European Information Economy  Four horizontal priorities: -promotion of intangible investment; -development of industrial cooperation; -insure fair competition; - modernization of the role of the public authorities
Industrial policy in an enlarged Europe (2002)	Aims to create favorable conditions for industrial competitiveness	Horizontal, but with an increase accent on sectoral initiatives	Re-focusing on the manufacturing sector;  A new focus on knowledge, innovation and entrepreneurship as determinant factors of growth;  Identification of several, mainly sectoral, initiatives which would facilitate the development of areas with a strong potential
“Stimulation of the structural change: a policy for an enlarged Europe” (2004)	Aims to create favorable conditions for industrial competitiveness	Horizontal integrated approach to the relevant competitiveness policies	“Better regulation” through deeper integration and a decrease of administrative burden  “An integrated approach to competitiveness” in 5 areas (knowledge, internal market, cohesion, sustainable development, international competitiveness)
Implementing the Community Lisbon Programme: A	Aims to create the adequate framework for	New industrial policy: integrated approach of	7 horizontal initiatives 7 sectoral initiatives

Policy Framework to Strengthen EU Manufacturing - towards a more integrated approach for Industrial Policy (2005)	development of the firms and for innovation in order to make EU an attractive location for investment and job creation	sectoral and horizontal initiatives. <u>Complementary</u> Measures to the already existing industrial policy framework	(pharmaceutical, biotechnology and life sciences, space industry, ICT, mechanical engineering)
“Mid-term evaluation of the industrial policy. A contribution to the EU Strategy for Growth and Occupation”	The pro-active creation of the adequate framework for development of the firms and in order to make EU an attractive location for investments in industry and job creation, taking into account that most enterprises are SME’s.	Integrated approach, horizontal and sectoral.  Proactive approach  Focus on SME’s	Horizontal: Regulatory framework; innovation; standardization; clusters; sustainable industrial policy; external competitiveness and market access; energy intensive industries; Improve the access to resources and raw materials; structural change; industry services.  Vertical: food industry; mechanical engineering industry; space industry; defense industry; security;

In conclusion, we may say that the industrial policy of the European Union undergoes a period of transition, from interventionist measures (industrial lobby, nationalist interests) to measures of active support of the economic branches by:

- vertical policies which must not affect the competition on the particular market but rather correct the possible market failures and to create a framework, as favourable as possible, for the development of the priority branches;
- treating as horizontal some technologies which may have multiplying development effects in the economy or society (biotechnology, ICT);
- integration of the horizontal policies which target the general EU goals with the vertical stimulation of the economy (obvious cases are the corroboration of the industrial priorities with the research priorities, or the development of space technology industry and of the defence industry to strengthen the socio-economic security).

## **2 Evolution of the industrial policy in Romania**

The industrial policy of Romania was placed for quite a long period of time after 1990 in the shadow of the confusion between the wish to promote certain branches of the economy regarded as having priority (many times according to ad-hoc criteria) and the trends on interventionism in the economy under the stress of pressure groups. Together with the definition of the first strategy of economic development on the medium term (2000), within the context of the reforms which began after the EU accession negotiation started, one may speak for the first time in the post-December history of Romania of an outline of industrial policies and thereafter of a more systemic and consistent vision in approaching this policy.

The subsequent subchapter presents briefly some programmatic or strategic documents which contain elements of industrial policy aimed to lead the Romanian economy towards a higher level of competitiveness and sustainability of the economic growth.

### **2.1 Documents substantiating the industrial policy in Romania**

#### **I. National Plan of Development 2007 to 2013**

Priority 1 of the National Plan of Development 2007 to 2013 is the increase of economic competitiveness and the development of the knowledge-based economy, in which the long-term increase of competitiveness means a process of building an economic structure based on capital investments and on research-development and innovation. This translates in the general goal of this priority, which is to increase the productivity of the Romanian enterprises, with the following sub-priorities: 1) increase the competitiveness by improving the access of enterprises to the market; 2) development of the knowledge-based economy, by promoting research and innovation and by accelerating the development of the information society; 3) improve energy efficiency and the utilisation of renewable resources of energy, which to reduce the energetic intensity throughout the entire chain, from the natural resources and production to the final utilisation of the electric and heating energy.

#### **II. Governing Programme 2005-2008**

The same strategic goal of the industrial policy is included in chapter 13 of the Governing Programme 2005-2008, namely the increase of competitiveness and of the performance of the Romanian industry, with the following four general goals: 1) increase of competitiveness; 2) enhance the role of research and development; 3) promote the sustainable management of resources and environmental protection; 4) improve the professional training and occupation of the workforce, achievable by instruments of industrial policy such as sectoral assistance, privatization and restructuring, assistance for export, support to the SMEs and regional development, access to information and treatment of the externalities.

In the field of *energy*, the strategic goals of the Government, developed thereafter in the *Energy Strategy of Romania for the period 2007-2013*, are:

- 1) Achieve real competitiveness in the energy field by reforming the following sectors: mining, natural gases, transportation and distribution of electrical and heating energy.
- 2) Improve the institutional framework in the field of energy;
- 3) Remove the distortions affecting market competition.

The field of *sectoral assistance* must be harmonized with the provisions of chapter 15, *Industrial policy*, and chapter 1, *Free circulation of goods*, negotiated with the European Union and with the three European pillars – competitiveness, research-development and

innovation, sustainable development by measures such as: development of the system for public acquisitions; encouragement of the strategic alliances on technological and industrial, economic or financial bases; promotion of the industrial clusters; sectoral assistance for the high value added products using domestic resources.

The governmental measures for the *trading policy, exports and foreign investments*, include: increasing the share of Romanian exports of industrial products by finding market niches for them, particularly for the products with a high level of processing; programs for the relocation of production in less industrialized areas; promotion the capital export; increase the volume of foreign investments in Romania.

The Program measures related to the SMEs refer, among other, to: progressive increase of the start-up financial resources to stimulate SMEs establishment and functioning; implementation of the European Chart on the SMEs; encourage the individual initiative and improve the managerial training; ensure SMEs access to public acquisitions; counselling for SMEs; support research, development and technological innovation activities and the implementation of their results; assistance in implementing the modern and competitive industrial management.

The governmental policy in the field of *privatization and restructuring*, during 2005-2008 is oriented towards the large commercial enterprises and towards restructuring the societies with majoritary state capital on criteria of competitiveness, by measures such as: continue the privatization of the large and medium commercial companies; restructuring of the state-owned sector; modernization, retechnologization and optimisation of the technological flows in the potentially competitive industrial units.

The policy in the field of *environment and natural resources* aims, mainly, to reduce the risks of nonconformity of the Romanian commercial companies with the international norms for environmental protection and measures to observe the principles of sustainable development, by: regulate the environmental externalities; assistance to develop enterprise strategies aimed towards environmental and resource protection; implementation of ISO-14001 system of environmental management at the economic operators.

With the view to *integrate the policies of research-development and of quality infrastructure* within the industrial policy, the following measures will be taken: support the activities and infrastructures specialised in assistance, information and technologic transfer; develop the infrastructure of quality and stimulate the implementation of the system of quality management (ISO 9000) by the economic operators.

**III. The Industrial Policy of Romania 2005-2008**<sup>66</sup> is based on the Governing Programme 2005-2008, which set for the industry strategic goals harmonized with the Lisbon Strategy and with EU policy in the field of industrial policy, and it focuses on the horizontal factors which determine the competitiveness of the industrial sectors – human capital, research, innovation, entrepreneurship, observance of the environmental conditions.

The *general objectives* of the industrial policy for 2005-2008 are:

- increase competitiveness;
- enhance the role of research, development and innovation;
- promote a sustainable management of the resources and environmental protection;
- improve professional training and workforce occupation;

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<sup>66</sup> Elaborated by the Inter-ministry working group for industrial policy, the document was approved by Government Decision in September 2005.

- develop the cooperation of the industrial services and the public-private partnership.

The *main factors of influence* identified for the industrial policy are presented briefly below.

1. *Consolidation of a stable business environment* by an institutional framework harmonized with the one of the European Union.

2. *Support for RDI and for the infrastructure required to evaluate the conformity of the industrial products and services.* The objectives of this area are:

- increase the role of RDI for economic development and for the increase of industry competitiveness;
- promote investments in RDI;
- support the development of networks for innovation and for the technological transfer of RDI results to the economy.

The following *measures* are required to achieve these goals:

- provide a legislative framework for the protection of RDI activity;
- increase the public spending on RDI up to about 1% of the GDP by 2007;
- encourage the participation of the private sector in RDI activities;
- support and develop the capacity of dissemination and absorption of RDI results within the economic environment;
- develop sectoral programs to stimulate innovation.

3. *Development of free, competition markets.* With the view to develop market mechanisms, the rules of granting state aids will be rigorously observed, the sphere of action of the monopolies will be restrained gradually and the process of price liberalization will continue in the areas where they still are controlled by the regulatory authorities.

4. *Sectoral assistance.* In this field, the *priorities* of the Ministry of Economy and Commerce are:

- annual evaluation of the policy for sectoral assistance;
- encouragement of the strategic alliances on technological and industrial, economic or financial bases;
- promotion of the industrial clusters on the principle of international specialization and industrial complementarity with EU countries, with Central and East-European countries and with countries from other close areas;
- development of the internal market for industrial products by using the system of public acquisitions;
- sectoral assistance for the high value added products using domestic resources (IT, electro-technical industry, car components) using domestic resources.

The Ministry of Economy and Commerce will use the following instruments to achieve these priorities:

- The *program for increasing the competitiveness of the industrial products*, which supports the producers from the manufacturing industry to implement and certify the systems of quality management and systems of environmental management;
- programs for the identification and support of the areas displaying a potential for crowding;

- programs for the support of cooperation between the regional university and business environments.
- programs for the support of the SMEs;

5. *Promote the direct investments* to ensure a transparent and stimulating investing climate, by:

- grant special assistance to the foreign partners during the information, initiation, implementation and post-implementation of investment projects and to the foreign investors from Romania to reinvest the profit or for new investments.
- elaborate a strategy to promote direct foreign investments;

6. *Support the development of small and medium enterprises*, by facilitating the access to financing, assistance, consultancy and information services. The strategic priorities to support SME development are:

- establish a business environment favourable to SME formation and development;
- develop SME competitive capacities;
- improve SME access to financing;
- improve SME access to foreign markets.

It was decided that the Lisbon Agenda is to be implemented, as of 2006, in five areas of priorities: stimulate entrepreneurship; support for innovation; improve the employment condition; finish the reform of the market for products; identification of advantageous solutions for the environment which to contribute mainly to the sustainable development of the SMEs.

7. *Assistance for export* to increase the share of the Romanian exports of industrial products with a high level of processing. The following measures will be promoted:

- technological specialization of the production and export, still intensive in terms of work and material and energy resources.
- find market niches, particularly for the products with a high level of processing;
- support the expansion of the range of specialised services of consultancy and training for commerce;
- grant a guarantee for commercial or non-commercial risk.

8. Support the *privatization and restructuring of the commercial companies* and *finish the privatization of the state sector* through the following measures:

- continue the privatization of the commercial companies with majoritary state-owned capital;
- reorganise the activities to make them more efficient;
- monitor the privatization contracts;
- liquidate the minority packages owned by the state, by market mechanisms;
- modernize, retechnologise and optimise the technological flows in the potentially competitive units, under the conditions of the law.

9. *Reduce the environmental impact of the industrial activities*. The main objectives of the environmental protection and resource management are:



- integrate the requirements for environmental protection and resource management in the sectoral, regional and company policies and strategies;
- implement the best available technologies and the “cleaner technologies” in all industrial sectors, resulting in a lower production of wastes and in the protection of the natural resources;
- establishment and development of a free market for technologies and services making use of wastes and for the efficient utilization of the energy.

The improvement of the environmental performance and the achievement of the set goals is encouraged by support for the implementation and certification of the system of environmental management through the *Program for the increase of industrial products' competitiveness*.

10. *Development of the policy for human resources and for the promotion of social cohesion*, by policies for the acquisition of new abilities, improvement, specialisation in work and continuous learning. The objectives for this field are:

- workforce flexibilization by increasing its mobility (new qualification);
- development of vocational know-how and training and of human resources management;
- specialised training by a close cooperation between the educational system and the business environment (school for industrial design, industrial high schools, vocational schools, etc.).

Social cohesion is a determining factor in the successful achievement of the structural adjustment and economic reform. Stress will be laid on the implementation and development, mainly, of the following actions:

- drawing in the social partners and other factors involved in the industrial activity within the process of policy elaboration and implementation;
- permanently available procedures for counselling with the economic partners and with the partners of social dialogue, as well as permanently available procedures for the dissemination of useful information;
- get the support of the social partners in achieving the structural adjustments;
- active support for a system of social protection, as good as possible.

A priority sector of action is the *manufacturing industry*, given its important contribution to the Romanian production and exports, on the one hand, and its environmental impact (in terms of polluting emissions, wastes, consumed material and energy resources), on the other hand. In the manufacturing industry, the improvement in terms of material and energy consumption, in terms of lack of comparative advantages and preponderance of the industrial branches intensive in resources and work force must be based on a dynamic approach, with innovation in the technological processes and in the production of goods and services.

#### **IV. Strategic Plan of the Ministry of Economy and Finances**

The general priorities of the Ministry of Economy and Finances are:

- increase the competitiveness and performance of the Romanian industry within the European and world context
- satisfy the requirement of electric and heating energy under conditions of quality and safety of supply, while observing the principles of sustainable development;

- establishment of a knowledge-based economy by increasing the role of research, development, innovation.

### *1. Policy in the field of mining industry*

The mining sector is generally characterized by a low technological level and by a high risk of exploitation, by a distorting competition, governmental subsidies and a high environmental impact. Therefore, the *Strategy of the mining industry for the period 2004-2010* aims to solve these problems by setting the following priorities:

- commercial approach of the mining activities;
- lower direct involvement of the government by a gradual attraction of private investments;
- alleviate the social problems raised by the closure of the uneconomic mines and revitalization of the economy from the affected mining regions;
- alleviate the environmental impact.

### *2. Industrial policy*

The *strategic goal* of the industrial policy for the following period is to increase the competitiveness and performance of the Romanian industry; the *general objectives* are: increase the role of research and development; promote a sustainable management of the resources and environmental protection; improve the professional training and increase the occupation.

The aim of the *program to increase the competitiveness of the industrial products*, managed by the Ministry of Economy and Finances, initiated by emergency ordinance of the Government No 120/2002, on the approval of the system for the support and promotion of export with state financing, is to fulfil the requirements for competitiveness of the industrial products for the EU market by implementing the standards of quality. The *program to increase the competitiveness of the industrial products* (Government decision No 1247/2005) lends, within the limits allowed by the legislation on the state aid, up to 90,000 euro to the economic operators from the manufacturing industry for a period of 3 years, for activities such as:

- implementation and certification of the systems of quality management and environmental management (75%);
- implementation and certification of the systems for the management of health and occupational safety, social responsibility, food hygiene and/or of the systems for information security management (65%);
- endowing, modernizing or licensing the existing laboratories of testing and standardisation (65%);
- product certification and/or obtaining the ecological label for the products (65%);
- adoption of new technologies and products to valorise the research results obtained from research-development programs financed from public funds and application of the inventions of the Romanian authors protected by the State Office for Patents and Trademarks (65%);
- make analyses of comparative evaluation for activities from the manufacturing industry, to achieve the plans of restructuring and development (65%).

### *3. Research-development*

The Ministry of Economy and Finances administers its own *Sectoral Plan for Research-Development in Industry*, the research nucleus-programs of the 7 NRDI subordinated to it. This is done by contracts intended mainly for the manufacturing industry, evaluated and monitored by the Commission for Technologies and Industrial Products of the Consultative Collegium for Research by the Ministry of Education, Scientific Research and Youth, whose objectives are to increase the competitiveness of the industry, to increase the energetic efficiency, the integrated control and diminish pollution, to promote clean technologies, to promote the renewable resources and the ecological resources, to increase the degree of waste recycling.

#### *4. Energy policy*

The general objective of the energetic sector is to cover integrally the domestic consumption of electric and heat energy, while increasing the energetic security of the country, with a sustainable and competitive development.

#### **V. Other documents of industrial policy**

- Decision no 55 of January 13, 2005 concerning the approval of the Strategy for the restructuring of the Romanian metal works industry;
- Strategy for the development on the medium and long-term 2001-2010 (HG 1297/20.12.2001) of the industry of machinery and households appliances;
- Strategy for the development of the industry of medical equipment and instruments during the period 2001-2010;
- Strategy for the export of oil products, tire and plastic ware and fertilizers;
- Strategy for the development of the textile industry, clothing, leather processing and footwear;
- Strategy for the development of the furniture industry, wood products, cellulose and paper, considering the more efficient utilization of the wood resources for the increase of competitiveness, 2005-2008;
- Strategy for glass production;
- National Strategy for waste management and the National Plan for waste management (HG nr.1470/09.09.2004)
- Strategy for the electro-technical industry, electronics and fine mechanics for the development of high added value production.

## **2.2 Promotion of the sustainable development in industry**

### **2.2.1 Performance of the manufacturing industry from the perspective of the sustainable development**

The manufacturing industry holds an important share within the industrial production and exports of Romania. The growth of the production volume, of the added value and of the exports of the manufacturing industry during 2001 to 2004, contributed significantly to the ascendant evolution of the performance of the Romanian industry and economy. However, the structure of industry exports reflects the high share of the traditional industrial sectors and the low share of the highly technological sectors. The exports of the manufacturing industry between 1999-2004 showed a slight decrease of the export of resources and of the low technological products.

The most energy-intensive branches of the manufacturing industry (NACE 2 figures) are: production of cellulose, paper and paper products (21); production of chemical substances and products (24); production of other non-metallic products (26); metallurgy industry (27). By the volume of production, the most important branch is the metallurgic industry (27); according to the added value, the most important branches are the production of chemical substances and products (24) and the production of other non-metallic products (26). Except for groups 21 and 26, the share of the gross added value of these branches within the overall manufacturing industry is lower than that of the production, which means that the production ranges in the lower part of the scale of value, with low profits – and therefore, low investment opportunities – and vulnerable to the raising cost of the materials and energy.

These energy-intensive branches hold a significant share within the production of the manufacturing industry, but they have a low share of the added value within the overall production and they are very vulnerable to the price of the material and energy inputs. Furthermore, the intermediary consumption of these branches is very high.

A consistent part of the high consumption of energy and materials of the Romanian economy is due to the structural problems – the high share of energy-intensive sectors within the overall production and exports – and especially the rather low concern for eco-innovation and eco-efficiency. In general, the positive evolution of the indicators of eco-efficiency was due, with few exceptions, to the growth of the GDP/GAD<sup>67</sup>, while the absolute consumptions remained constant or increased with the GDP/GAD. This shows the need for significant structural changes, by industrial policies which to provide for the convergence of the ecological strategies and of the programs of state aid given to adopt environmental and innovation technologies.

Although the achievement of a balance between the efficiency of using the material and energy resources, preservation of the environmental quality and competitiveness through operational goals, such as the alleviation of the environmental impact and the reduction of the energy intensity, can be found in all the sectoral strategies of industrial development, a good solution would be a strong support for investments in new technologies which to reduce the material and energy costs, accompanied by a higher interest to increase the investments in research-development and (eco-)innovation, with positive effects on the long-term competitiveness. To this end, the specific programs financed by the EU are an opportunity to increase the investments in new technologies and in research-development aiming to improve the ecologic performance and to increase the eco-efficiency.

At the company level, even though the costs may very high on the short term, the ecological innovation may compensate the efforts on the long term, by strengthening the competitive position of the particular company/branch. Anyhow, a static perspective on competitiveness and eco-efficiency in which the stress lies exclusively on reducing the cost of materials and energy, corroborated with an environmental strategy focusing almost exclusively on the observance of the polluting standards, runs the risk to loose the competitive advantages on the long term.

**Table 2.1. SWOT analysis of the Romanian industry in terms of sustainable development**

<b>Strengths</b>	<b>Weaknesses</b>
- Macroeconomic stability; - Quality natural and energy resources	- High energy intensity of the Romanian economy; high share of polluting industries

<sup>67</sup> GDP – gross domestic product; GAD – gross added value.

<p>which can be exploited (oil, natural gases, salt, wood, clay, sand, marble);</p>	<p>with the industrial products and exports of Romania;</p> <ul style="list-style-type: none"> <li>- Technological and competitive lag from the EU;</li> <li>- Low volume of investments for retechnologisation and modernisation;</li> <li>- Energy producing plants worn out or using old, polluting technologies;</li> <li>- Production is concentrated in low added value sectors;</li> <li>- Low number of certified enterprises (ISO 9000, ISO 14000, EMAS);</li> <li>- Exports based mainly on low or medium added value products;</li> <li>- Insufficient financing of RDI activities from public and private funds;</li> <li>- Enterprise competitiveness due to low costs, not to innovation;</li> <li>- Low capacity for the absorption of research results and low level of innovation in the enterprises;</li> <li>- Insufficient development of the infrastructure and of the services of technological transfer and innovation;</li> <li>- Price of the electrical power for the industrial consumers higher than the EU15 average;</li> <li>- Low level of using renewable resources, other than the high capacity hydropower.</li> </ul>
<p><b>Opportunities</b></p>	<p><b>Threats</b></p>
<ul style="list-style-type: none"> <li>- Integration of the national energetic system within the regional networks;</li> <li>- Integration of the national programs and policies for competitiveness, RDI, environment and industry.</li> </ul>	<ul style="list-style-type: none"> <li>- Increasing costs for the raw materials and energy, including for the imported ones;</li> <li>- The trend of an increased energy consumption in Romania on the medium and long term;</li> <li>- Higher pollution due to industrial processes, especially to those related to energy.</li> </ul>

Source: MEF, *Sectoral Operational Program Increase of the economic competitiveness*, with our additional notes.

### **2.2.2 Policy mix for the increase of eco-efficiency and competitiveness**

Although there still isn't a Strategy for the Sustainable Development of Romania with clear goals and priorities for the industry, there are several *legislative* (environmental regulations and environment quality standards), *technical* (technological standards and the use of the best available technologies) and *economic* instruments to increase eco-efficiency and competitiveness which might be put into practice by collaboration between the Ministry of the Environment and the Ministry of Economy and Finances.

The regulations on the limits of emissions, although they identify the large polluters and limit the environmental pollution, do not take into consideration the comparative costs, which can make them costly for some companies. The BAT and the ecological label are more efficient instruments to alleviate the ecological impact of the technological products and processes. On the other hand, the economic instruments (taxes on the consumption of natural gases, taxes on NO<sub>x</sub> and on SO<sub>2</sub>, the state aids, the incentives, the quantitative quotas for the output unit, the tradable emission permits etc.) are more flexible and less costly to achieve the political goals related to the correction of the market failures and to promote eco-efficiency, because they quantify the externalities of the economic activities, allow the industrial sectors to achieve the environmental goals in a more flexible manner and with lower costs and they stimulate the technological innovation on the long term<sup>68</sup>.

However, the enforcement of these instruments must be made in conjunction with other legislative and political instruments, which requires a coherent legislative framework. First, the (current and potential) instruments have to be evaluated *ex ante* in order to determine the ecological efficiency and the social and economic impact (in terms of losses of competitiveness for some sectors) of their enforcement<sup>69</sup>. The total economic value of these benefits includes the "value of utilization" (direct benefits resulting from the efficient utilization of the natural resources) and the "value of non-utilization" of the ecological capital (conservation of the natural resources for the future generations)<sup>70</sup>.

An environmental fiscal reform is needed to reduce the environmental impact, by shifting from taxing the workforce to taxing the consumption of resources and the pollution (for instance taxing the consumption of resources and the use of this income to replace the capital), as a *win-win* solution to solve the occupational and environmental problems, with positive effects on the welfare. This reform has to be corroborated with the use of fiscal incentives and subsidies to encourage the ecological behaviour, eco-innovation and research-development<sup>71</sup>, by integrating the policies of competition, research-development and innovation etc.

The importance of the material efficiency for the manufacturing industry is given by the high weight of the average material costs within the total production and by the significant technological potential to reduce these costs by optimising the production processes and by increasing the efficiency of the technologies and of the manufacturing processes.

In industry, *subsidies* are given on economic or social grounds and their environmental effects are generally ignored. They aim to increase the competitiveness of certain products, technological processes and industrial sectors, but by doing this through regulations, fiscal

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<sup>68</sup> The more intense utilization of the economic instruments was also supported within the 6<sup>th</sup> Program of Action for the Environment, renewed EU Strategy for Sustainable Development, and within the relaunched Lisbon Strategy.

<sup>69</sup> OECD, *Instrument Mixes for Environmental Policy*, OECD, 2007.

<sup>70</sup> OECD, *Assessing Environmental Policies*, Policy Brief, February 2007.

<sup>71</sup> COM(2007) 140 final, *Green paper on market-based instruments for environment and related policy purposes*, 28 March 2007.

exempts and delay, preferential taxation rates, state property, acquisitions commitments, subsidised credits, preferential interests, direct or indirect budgetary transfers, trade barriers etc., they have adverse environmental effects, they can distort prices, affect the decisions of resource allocation and influence the amount of goods and services produced and consumed in an economy. Their cancellation has beneficial effects. Currently, the trend is to give up the subsidies granted to some industrial sectors for horizontal policies, and replacing them by instruments of direct support – research-development, regional development and SME policies – or of indirect support – public acquisitions, contracts of research-development and financial assistance for the manufacturing industry<sup>72</sup>.

*The incentives for the manufacturing industry* can be awarded to increase the material efficiency, to support RDI, for the absorption of “clean” production technologies and for the implementation of the management of natural resources (such as the program *Business and Resource Efficiency and Waste*, in Great Britain).

At the *microeconomic* level, the most suitable instruments are the environmental management systems.

a) *Life cycle management (LCM)* is an integrated approach used to implement the concept of eco-efficiency within the companies. Its purpose is to minimize the ecological impact of the goods and services along their life cycle. Specific to this instrument is that it sets the bases for collaboration between firms, at different stages of the value chain of a product (in practice it is rarely observed). A strategic approach of LCM has the following direct effects, apart from increasing the ecological and economic performance of a company:

- identification of the operations and segments of the value chain with the highest ecological impact;
- identification of the economic benefits in terms of cost reduction, high sales, product betterment and innovation<sup>73</sup>.

b) *Eco-management and audit scheme (EMAS)* allows the companies to evaluate, control, monitor and improve their ecological performance. It incorporates the formal system of management EN ISO 14001, but with stricter standards. Besides the financial benefits resulting from the sustainable utilization of resources, other benefits of EMAS implementation are the creation of a better public image, a higher adaptation of the ecological standards set by the environmental legislation etc.

According to an OCDE<sup>74</sup> study, the public policies and the severe environmental standards may stimulate the implementation of EMAS and of other similar systems of management by the companies. The stimulants given by the authorities can be legislative or assistance in implementing the systems of ecological management through:

- a) schemes of support through the system of public acquisitions;
- b) financial assistance (subsidies for the newly EMAS registered companies, consisting of a percentage of the implementation costs or of the allocated amounts; tax cuts for the acquisitions intended to alleviate the environmental impact; funds for technical assistance, consultancy and training of the staff);

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<sup>72</sup> Jean-Philippe Barde and Outi Honkatukia (OCDE), *Environmentally Harmful Subsidies*, July 2003.

<sup>73</sup> K. Brady, P. Henson, J. Fava, *Sustainability, Eco-efficiency, Life Cycle management, and Business Strategy, Environmental Quality Management*, 1999.

<sup>74</sup> OECD, *Business and the Environment. Policy incentives and corporate responses*, OECD, Paris, 2007.

c) technical and informational support (specialised educational programs; partnership with companies which have already implemented EMAS, technical assistance adapted to the specificity of the economic sectors<sup>75</sup>.

Therefore, even though they can stimulate the exploration of *win-win* opportunities at the company level, the political instruments have to be chosen according to the particularities of the economic sectors and to the potential impact on the competitiveness of the companies acting in that particular sector. The *ex ante* evaluation of these instruments is important and it has to answer the following three questions:

- 1) Which economic instrument is the most adequate (ex. stimulants or utilization taxes)?
- 2) Which are the intended objectives, benefits and targets?
- 3) How will the chosen economic instrument contribute to the achievement of the intended objectives, benefits and targets?

### **2.2.3 Integration of the industrial and environmental policies**

The environmental policies are an important means of influencing the way in which companies organise their production, the products and services they decide to produce (such as the creation of competitive advantages by products incorporating ecological innovations). Taking into consideration the environmental issues doesn't mean just reflecting the social costs in prices, but also to realize the non-eco-efficient character of the existing products and production systems and, therefore, the need for eco-efficient improvements (by innovations and by adapting the best available technologies). The latter can contribute to company competitiveness through:

- a) production advantages – the higher is resource efficiency, the lower are the costs;
- b) trading the innovations;
- c) reduce the costs with pollution control;
- d) improvement in the field of *marketing* and commercial image.

A new political paradigm is required to stimulate the eco-efficient betterments, based on the authorities-business environment relationship and on a new type of regulations consisting in compulsory minimal standards and targets within a coherent and stimulating legislative framework<sup>76</sup>. The anachronism existing between the traditional environmental policies which include reactive measures and the policies of innovation, which demand a proactive behaviour, prevents the development of a socially-responsible market economy. On the other hand, the competitiveness-environmental protection dichotomy still persists, both in the economic theories, and among the policy decision-makers. A barrier to the eco-efficient innovations is the conviction that the environmental protection measures might be a burden for the companies. As Michael Porter<sup>77</sup> shows, the conflict between environmental protection and economic competitiveness is a false one. The correction of this situation claims the integration of the technological policy with the environmental policy, which to encourage eco-innovation and which to improve the ecological performance, simultaneously with the

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<sup>75</sup> COM(2004) 745 final, *Report from the Commission to the Council and the European Parliament on incentives for EMAS registered organizations*, November 2004.

<sup>76</sup> René Kemp și Maj Munch Andersen, *Strategies for eco-efficiency innovation*, mai 2004, <http://kemp.unu-merit.nl/>

<sup>77</sup> Cf. Michael E. Porter și Claas van der Linde, *Toward a New Conception of the Environment-Competitiveness Relationship*, *The Journal of Economic Perspectives* 9, nr. 4/ 1995.



economic growth and job creation<sup>78</sup>. Furthermore, the instruments of the technological policy – public private research partnerships, dissemination of technologies and the technological foresight – may direct research-development towards environmental goals.

The empirical studies conducted by OCDE<sup>79</sup> show clearly that in the absence of political interventions, the companies are not stimulated to alleviate the ecological impact of their production or products, to implement systems of ecologic management, to invest in research-development with ecological effects or to be interested in *win-win* solutions which to put into convergence the commercial strategy of the company with the ecological performance. The study shows the empirical evidence on the effect of the severe environmental policies on the:

- *ecologic performance*: the severe environmental policies determine the reduction of the adverse ecological effects of the production practices and more investments by the companies;

- *clean production*: the severe environmental policies stimulate changes in the production processes, more than in the *end-of-pipe* technologies;

- *research-development*: the severe environmental policies determine the companies to seek alternative ways to improve their ecological performance and, thus, to invest more in environmental research-development.

On the other hand, the environmental innovations are stimulated not only by the factors external to the company (such as the pressure of the environmental regulations), but also by internal factors, such as the need to cut costs, getting competitive advantages, going past the technological lag, client pressure etc. Furthermore, a dynamic managerial approach stressing on innovation, and not just on the simple optimization of the costs with the material inputs, may yield significant competitive advantages for the companies.

#### **2.2.4 Environmental Technology Action Plan (ETAP)**

The challenge of the sustainable policies of innovation is to create a coherent and integrated political framework and to conceive strategies which to stimulate the technological and institutional innovation, covering long-term goals in all three dimensions of the sustainable development. This integration of the innovation policies with the environment is the *Environmental Technology Action Plan* (ETAP). In January 2004, as junction point between the EU Strategy for Sustainable Development and the Lisbon Agenda, the Commission launched ETAP, intended to stimulate the development and utilization of environmental technologies, to remove the financial, economic and institutional barriers hindering the development of the environmental technologies and to integrate the environmental protection, the technological innovation and the competitiveness<sup>80</sup>.

The first implementation report on ETAP<sup>81</sup>: was published in January 2005. Its recommendations are:

- a) to establish "green investment funds", especially for small and medium-sized companies;

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<sup>78</sup> Maj Munch Andersen, *An Innovation System approach to Eco-innovation – Aligning policy rationales*, <http://web.fu-berlin.de/ffu/akumwelt/bc2004/download.htm>

<sup>79</sup> OECD, *Business and Environment. Policy Incentives and Corporate Responses*, OECD, 2007.

<sup>80</sup> European Commission, *Stimulating Technologies for Sustainable Development: An Environmental Technology Action Plan for European Union*, COM(2004) 38 final.

<sup>81</sup> European Commission, *Report on the implementation of the Environmental Technologies Action Plan in 2004*, COM(2005) 16 final.

- b) to define environmental "performance targets" for key products, processes and services;
- c) to urge member states to produce "national road maps" for implementation of ETAP, with concrete measures and deadlines;
- d) to correlate ETAP with FP6, with the national and regional programs of RDI;
- e) to use stimulants for the environmental technologies through state aids.

The last, May 2007, implementation report on the progress of ETAP<sup>82</sup>, shows that there still is a lot to be done to exploit the economic and ecologic benefits of eco-innovation by stimulating research, by increasing the participation in eco-innovation networks and by drawing more investments.

In Romania, the *National road map for the implementation of ETAP*, was finalised in 2007 by the Ministry of the Environment and Sustainable Development. Its last version<sup>83</sup> reviews the national policies and strategies relevant to ETAP and highlights the importance of developing performant environmental technologies for the free access of the Romanian products on the free European market and to increase the export opportunities. The document proposes actions and responsibilities for all 8 areas of action stipulated by ETAP – research-development; checking of the environmental technologies; setting targets of performance; mobilizing sources of financing; establishing the market for the environmental technologies and for eco-innovations based on market instruments and state aid; "green" public acquisitions; awareness and training; worldwide promotion of the environmental technologies; unfortunately, all are at the declarative and extremely general level, and don't set concrete objectives and ways of implementation and monitoring, nor do they propose a manner of cooperation between the responsible ministries.

In what concerns the integration and correlation of ETAP with the other policies in Romania, there is no attempt to establish a *political coordination* between the existing policies and strategies (the sectoral operational programs, NPRDI, the strategies that have been elaborated, the industrial and energy policy, etc.), which already have parts dedicated to the environmental technologies, to eco-efficiency and eco-innovation, on the one hand, and between the involved organisms (for instance between the Ministry of Education and Research, the Ministry of Environment and Sustainable Development and the Ministry of Economy and Finance), on the other hand. Furthermore, a strategy for eco-efficiency and for sustainable technologies in industry has yet to be developed in Romania<sup>84</sup>.

The problems affecting the *energy sector* are:

- a) high energy intensity which can become a handicap form the economic competitiveness within the context of liberalization and, implicitly, of increasing prices for energy;
- b) negative environmental impact of the energy-producing facilities, particularly in the large burning installations. Of the total 2005 production of electrical power, 56.7% was produced from fossil fuels, at high costs, while de hydropower stations produced only 34% of the electrical power.

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<sup>82</sup> European Commission, *Report of the Environmental Technologies Action Plan (2005-2006)*, COM(2007) 162 final.

<sup>83</sup> Ministry of the Environment, *Road map for the implementation of the Environmental Technologies Action Plan – ETAP in Romania*, variant 2 August 2007.

<sup>84</sup> A *Guidebook for industrial development in support of eco-efficiency* was published, financed through the *Sectoral Plan for research-development in industry* - [www.minind.ro](http://www.minind.ro).

The price of electricity for the industrial users is increasing and it is higher than the EU25 and EU15 average (Table 3.2), which affects the competitiveness of the Romanian industry, given the large share (98%) of the industry in the export of commodities.

**Table 2.2. Price of electricity for the industrial users (Euro/KWh)**

	<b>2004</b>	<b>2005</b>	<b>2006</b>
<b>EU-25</b>	0.0623	0.0672	0.0754
<b>EU-15</b>	0.0634	0.0681	0.0766
<b>Romania</b>	0.0468	0.0769	0.0773

Source: Eurostat

The energy intensity of the Romanian economy is high due to the structure of the national economy, in which there still is a high share of energy-intensive branches and products. Given the energy-intensity of the Romanian economy and the forecast increase of the energy consumption during the subsequent period, the following actions are necessary: to modernize the existing production facilities; to reduce the energy intensity; to improve the energy efficiency; to use renewable sources of energy.

**Table 2.3. Energy intensity of the economy (Gross domestic consumption of energy/GDP; 1995-100; kg petrol equivalent/1000 euro 95)**

	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>
<b>EU-25</b>	208.76	209.71	206.51	207.56	204.89
<b>EU-15</b>	190.53	191.35	188.42	189.48	187.48
<b>Romania</b>	<b>1457.22</b>	<b>1368.64</b>	<b>1316.48</b>	<b>1353.68</b>	<b>1226.95</b>

Source: Eurostat

Both the economic competitiveness and the sustainable development rely largely on the efficient use of energy sources and of energy, and the comparative analysis of the specific indicators of competitiveness show that the energy intensity is the competitiveness factor with the highest lag from EU countries.

To reduce the energy intensity of the national economy, *structural changes* and a *higher efficiency of using the energy* must be achieved. Particular attention must be paid to increasing the energy efficiency of the competitive branches, with a significant contribution to the export, by modernizing the energy-intensive industrial technological processes, by redirecting the production towards high value added products less intensive in terms of raw materials, and the implementation of new technologies with low ecological impact.

In Romania, the exploitation and processing of the non-renewable natural resources by inefficient technologies, the permissive enforcement of the environmental standards, the low level of investments in environmental infrastructure and the noninclusion of the environmental externalities within the costs, lead to an intense pollution in branches such as the extraction of fossil fuels, metal works industry, metallurgy, energetic industry, chemical and petrochemical industry, construction materials industry, etc.

In order to achieve the above goals, which incorporate simultaneously the desiderates included in the national energy strategy, in the operational program of competitiveness and in the environmental strategies, the measures of fiscal policy, of state aid policy, of SMEs policy and of innovation and research policy have to be coordinated, so as to redirect the Romanian

industry towards a higher share of “clean” branches, using the allowed state aids. To reduce the energy-intensive branches and their level of economic inefficiency (lack of competitiveness), a long-term support must be considered for investment programs which to replace the technology of the energy-intensive enterprises, to improve the energy efficiency and to cut down the polluting emissions.

### **2.3 Liberalization of the electric energy sector<sup>85</sup> in Romania**

The policies targeting the liberalization and integration of the electric energy sector, as well as the policies on the security of energy supply are not a direct part of the industrial policy, but they do have an important impact on the sustainable development of the economy by their horizontal action. By the correct price signals which it creates and by providing for the security of the energy supply, an efficient market of the electric energy establishes the premises for the right development of the industrial sector and promotes the fast structural adjustment of the economy.

Romania has adopted substantial measures to establish a competitive market for energy, ranking, in this respect, before many members states. The vertical separation was fully achieved; part of the distribution companies have been privatized; a significant horizontal separation has been produced, which decreased significantly the degree of market concentration. The whole sales market functions as of 2000, and its design has been significantly improved in 2005. The market is regulated by an authority whose independence is increasing; the reform of the regulatory framework has achieved important progresses in Romania, guaranteeing the regulated access of the third parties to the network and having a modern methodology to regulate the network tariffs. The market has opened gradually (the cumulated share of the consumers who changed their supplier between 2004-2007, reached 51%) (ANRE, 2007). As of July 1<sup>st</sup>, 2007, legally, all the consumers have the right to choose their supplier. The market structure after 10 years of separations is promising: 22 producers, over 100 suppliers, 8 distribution operators.

Unfortunately, these ambitious reforms fructify slowly, especially because there still is no real competition in the production sector. The reason for this is that most producers are still state-owned and many times are the subject of pressures from groups of interests. The most viable producers (hydropower plants, the energetic complexes), which could have attracted the interest of the private investors and large investments, were regarded as having a strategic importance and were not put out for privatization, not even partially. The thermoelectrical plants put out for privatization were too old, had old technology and required too many investments to attract investors. No significant *green field* investments have been produced yet in Romania, mainly because of the existence of groups of interests (many times, private groups) which seek subsidy-type advantages from state enterprises.

The energy sector has been shattered by numerous scandals of corruption and suffered from the financial problems of some important producers.

If until recently, the Government could offer the producers in big financial trouble successive waves of state aids under the form of debt exemptions and subsidies to pay the debts to private creditors, this option is much more limited after the accession.

Lately, due to the difficulties confronting the production sector, due to the large volume of investments required to meet the European environmental standards and, mainly, following

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<sup>85</sup> A consistent part of the text on the liberalization of the electric energy sector in Romania relies on Diaconu, Oprescu and Pittmann (2007)

the crystallization and promotion of a clear energy strategy, the Government started discussing plans to reorganise the sector. Essentially, these plans consist in refocusing the production sector by grouping the most viable producers (hydropower plants, the energetic complexes and the nuclear plant) together with the less efficient heat producers, in 1-3 large companies. In September 2007, the Prime Minister announced plans to create a national company of electricity concentrating a large part of the producers together with the distribution companies still owned by the state. Such a measure might represent a significant distancing from the idea of competitive electricity markets, to which Romania subscribed so far. Most gains from the liberalization of the electricity sector derive just from the effects of the competition between producers. This yields the best stimuli for the producers to minimize the costs by choosing the most adequate technology and mix of capacity and it pushes the market prices towards the marginal costs.

The costs of energy production in Romania are high by the European standards and already reflect in prices for the industrial consumers above the European average. The projects of “restructuring” rely on several erroneous economic ideas concerning the way to determine the market prices (see Diaconu, Oprescu și Pittmann, 2007). The highest problem of this approach is, however, that it ignores the effect of a concentrated market structure on competition. All the economic literature states the crucial importance of the market structure for the success of the liberalization process.

On a concentrated market, the 2-3 resulting production companies would have a significant power on the market. This translates in higher prices and in an inefficient allocation of resources. This would be a significant competitive disadvantage producing wrong signals for the development of the industrial activity in a still, energy-intensive economy of Romania, where the environmental costs are yet to be gradually internalized.

The problems of the electric energy production sector are not as much due to a market failure, as they are due to the past regulations which tried to use the energy price as an instrument of social protection, to the type of property and to the political interventions in the management of the state companies.

The competition in the energy production sector, together with better governance of the state companies and with a better structure of property, might yield significant gains of efficiency which, on the short term, are essential to the healthy development of the Romanian economy.

It might be wrong to believe that, if in Europe the energy sectors are concentrated, this is something to follow, as sometimes argued. The third legislative package<sup>86</sup> launched by the European Commission in September 2007, aims to fight aggressively just this situation, which is one of the main “structural failures” of the EU energy market and one of the main obstacles to its efficiency and integration. A competitive and integrated energy sector is, according to the Commission, essential in achieving the strategic goals of safe supply and sustainability of the new Lisbon Agenda.

On the other hand, the presence of a large regional player in this European geostrategic area may bring it, irrespective of the type of property, particular advantages in terms of efficiency during the current period with very high prices of the energy on the international markets<sup>87</sup>. A private management might be able to find the optimal solutions to distribute the financial

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<sup>86</sup> The package was introduced in September 2007 and it includes four documents: a new Directive amending Directive 2003/54/EC on the common rules concerning the internal electricity market, a new directive amending Directive 55/2003/EC on the rules concerning the internal natural gas market, a regulation establishing the Agency for the Cooperation of Energy Regulators, a regulation amending Regulation (EC) No 1775/2005.

<sup>87</sup> The opinion is not supported by one of the co-authors of this study, Oana Diaconu.

resources required for the investments of a large national company and to increase the profit rate of the company on a market already dominated by some big European players. Finally, the added value and the profit might be higher overall, and the incomes to the budget could receive a significant impulse, as it has happened after the privatization of Petrom.

The effects of such phenomena may be perceived as sequels of horizontal industrial policies, because they would change the cost structure in many branches of the economy depending on the energy intensity of each single branch.

## **2.4 Policies to stimulate investments**

The statute of Romania as member of the European Union involves special responsibility by the assumed commitments to attain the social and economic standards of the other EU countries and to converge towards the goals of the Lisbon Strategy. To make the European Union the most competitive economy of the world, each member state has to put efforts to increase the potential of all the productive factors and of the technological and innovative capacity. The transfer of the elements related to innovation, knowledge and quality of the human capital towards all the economic branches is a defiance to all those who decide the industrial policies and who can use horizontal measures to reorganize optimally the economy for the society.

Within the context of the post-accession strategy, Romania will obviously have to make, over the next years, significant investments in productive areas, in infrastructure and environmental protection, in the creation of more and better jobs. Our country will be confronted with the exigencies of developing a knowledge-based economy relying on the attraction and development of high productive technologies and on the development of the potential for research and innovation. To achieve the commitments assumed as EU member, to attain the performance of the other member states, the Romanian economy still needs to draw in large volumes of investments and important financial resources.

The direct investments are the main source of capital, know-how, technology and managerial skills. They contribute to the development and modernization of the economic infrastructure in Romania, they produce economic growth and create jobs.

The analysis of the flow of foreign investments in Romania over the past 17 years shows that the economic policies, the legislative and institutional stability, the quality of infrastructures and the facilities and stimuli that are awarded, may bear a major influence on the investor's decision. The use of financial or fiscal incentives doesn't replace, however, a stimulating legislative framework, but they can be regarded as a supplement to an already attractive investment framework or as a compensation for the market flaws which can not be remedied otherwise.

### **2.4.1 Necessity of new regulations to stimulate investments**

The foreign and domestic investments contributed substantially to the economic growth recorded by Romania over the recent years. These investments were encouraged by the fiscal policy, by the introduction of the single taxation rate and by the facilities stipulated by law 332/2001 concerning the investments with a significant impact on the economy.

The new fiscal code enforced as of January 1<sup>st</sup> 2007, cancelled most of the facilities awarded by the law mentioned earlier.

Under these conditions, after the accession of Romania to the European Union, the perspective to access structural funds, the regulations concerning the state aid, the higher real

interest of the investors for Romania (determined mainly by the economic growth and then by the status of EU member state), as well as need to draw a high volume of foreign investments, proved the necessity to elaborate a new Law of investments.

The new law on investments must be fundamented on a clear policy on the regional economic development which to take into account the interests of Romania to balance the differences between regions and to stimulate integrated investments in highly productive branches displaying technological progress and with a significant potential for economic growth.

The general juridical framework on the measures of state support has to be regulated so as to achieve a sustainable development of Romania by stimulating certain categories of investments. The goals sought in promoting investments are practically the ones attempted by the European Union: a) regional development; b) environmental protection and rehabilitation; c) research-development and innovation; d) develop human resources and promote social inclusion.

The categories of investments (3 groups) awarded facilities focus on investments in technological research and development to increase the competitiveness of a sector of activity, environmental protection, use of renewable sources of energy, modernization and development of the national energy system, implementation of infrastructure works.

The types of facilities which can be awarded differ according to the category of investment, according to the unemployment rate in the county hosting the investment and according to the GDP per capita in that county. Following are some examples of such facilities:

- Interest bonuses when taking credits;
- Collaterals for maximum 80% of the medium or long-term loans;
- Possibility to provide the infrastructure of required utilities within the perimeter of the investment;
- Access roads and modification of the infrastructure required to start and develop the project of investment;
- Subsidies to purchase tangible and non-tangible assets for categories 1 and 2 of investments;
- Taxes and levies exemption or reduction for the reinvested profit for a period of three years after the investment was put into function, for categories 1 and 2 of investments;
- Financial contributions from the state budget for the newly created jobs.

When employing these facilities, normative acts have to be issued, which approve the *schemes of state aid* applicable for each of the objectives mentioned above. These normative acts must observe the national procedures related to the state aid as stipulated in the Emergency Ordinance of the Government no. 117/2006, approved with modifications and additions by Law no. 137/2007. The investors will be eligible to benefit of one or more facilities provided they meet the relevant criteria.

### **3 Priorities of the industrial policies in Romania**

#### **3.1 Priority setting in the area of industrial policy**

##### **3.1.1 General framework for the elaboration of industrial policies**

Currently, the Program of Governance is implemented through the ministerial Action Plans, each of which sets 5 to 7 essential sectoral priorities. The Government (Public Policies Unit from the GSG and the Prime Minister Chancellery) analyses the sectoral priorities and the final report is submitted to the Council of Strategic Planning.

The inter-sectoral priorities are initiated by the institution which the main responsible with monitoring and implementing the measures to be presented to the relevant inter-ministerial council<sup>88</sup>. Government Decision no.750/2005 approved the establishment of 11 permanent inter-ministerial councils among which the *Inter-ministerial council for economic problems, fiscal and commercial policies, domestic market, competitiveness and business environment*.

##### **3.1.2 The Program of Governance and the Strategic Plan of the Ministry of Economy and Finances**

The four general goals included in the *Program of Governance 2005 to 2008* are: 1) to increase competitiveness; 2) to increase the role of research and development; 3) to promote a sustainable management of resources and environmental protection; 4) to improve the professional training and workforce occupation. The *Industrial Policy of Romania 2005 to 2008* introduces one more general goal: to develop the industrial cooperation and services, and the public-private partnership.

The management component of the Strategic Plan elaborated by the Ministry of Economy and Finances comprises, among other, section *Medium-term priorities*, which includes the general priorities set on the basis of the *Program of Governance 2005 to 2008* and on the basis of the medium-term public policies in the field of industrial policy. They are defined in a rather general manner:

P1) to increase the competitiveness and performance of the Romanian industry within the European and world context;

P2) to meet the requirement of electric and heat energy under conditions of quality and safe supply, while observing the principles of the sustainable development;

P3) to create a knowledge-based economy by increasing the role of research-development and innovation (RDI).

P1). In the field of the actual industrial policy, the Strategic Plan of MEF reiterates the *strategic goal* of the industrial policy, which is to increase the competitiveness and performance of the Romanian industry. To this end, MEF administers the *Program of increasing the competitiveness of the industrial products*, which awards limited financial assistance to the economic operators from the manufacturing industry for activities such as:

- implementation and certification of the systems of quality management and environmental management; implementation and certification of the systems of health and occupational safety management, of social responsibility, of food hygiene and/or of the systems of information security management; endowment, modernization and accreditation of the existing testing and standardizing laboratories; product certification and/or obtaining the ecological label for products; adoption of new technologies and products using the results of

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<sup>88</sup> According to the *Strategy to improve the system of elaboration, coordination and planning of the public policies in the central public administration*, published in the GD no. 870/ 28 June 2006.



research conducted during the research-development programs financed from public funds and application of the inventions of the Romanian authors protected by OSIM; do analyses of comparative evaluation for activities of the manufacturing industry to be used by the plans of reorganisation and development.

P2) In the field of energy, the *Energy Strategy of Romania for 2007-2020* was elaborated for the second priority.

P3) Regarding RDI, MEF administers its own *Sectoral Plan in the field of research-development in industry*, the nucleus-research programs of the 7 NRDI subordinated to it, by contracts intended mainly for the manufacturing industry, in areas such as the increase of competitiveness in industry, increase of the energy efficiency, integrated control and reduction of pollution, promotion of clean technologies, promotion of the renewable resources and of the ecological resources and increase of the level of waste recycling.

### **3.2 Competitiveness of the Romanian manufacturing industry**

The study coordinated by the Institute of World Economy, *Increase of the Romanian economy competitiveness*, proposed and applied a theoretical methodology to calculate a composite indicator to evaluate the sectoral competitiveness (ICCS) of the manufacturing industry for 1995-2004<sup>89</sup>. ICCS has four weighted components calculated by the aggregation of a set of indicators (indexes with fixed basis, 1995=100%):

a. Component production (40%), which includes the *Index of work productivity (45%)* and the *Index of the unit costs with the workforce (55%)*.

b. Component technology (20%), comprising the *Index of expenditure with RD per employee (30%)* and the *Index of capital intensity (70%)*.

c. Component structure (10%), which includes the *Index of assortment diversification (30%)* and the *Index of geographical concentration (70%)*.

d. Component exports (30%), comprising the *Dynamics of exports (50%)* and the *Share of foreign market (50%)*.

Because ICCS shows only the evolution of competitiveness compared to a references year, a hierarchy of competitiveness for 2002-2004 was introduced. The methodology to establish the hierarchy uses the same four components, with the same weights, the main difference from ICCS being that real values rather than indexes are used for the indicators of the four components. As each indicator represents criteria to evaluate competitiveness, each of these criteria was given a note from 1 to 22 (for the most competitive), and these grades were aggregated for each branch, preserving the shares from ICCS. This is a multicriteria analysis which used the following indicators:

a. Component production (40%), which includes *Work productivity (70%)* and *Capital output (30%)*.

b. Component technology (20%), comprising the *Intensity of investments (70%)* and *Share of the innovative enterprises (30%)*.

c. Component structure (10%), which includes the *Degree of assortment diversification (30%)* and *Degree of geographical concentration (70%)*.

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<sup>89</sup> Institute of World Economy (coord.), *Increase of the Romanian economy competitiveness*, June 2006. ICCS was implemented initially for Romania by GEA (Group of Applied Economy).

d. Component exports (30%), comprising the *Vocation for export (50%)* and *Share within the world trade of the branch (50%)*.

The main alarm signals from monitoring sector competitiveness are:

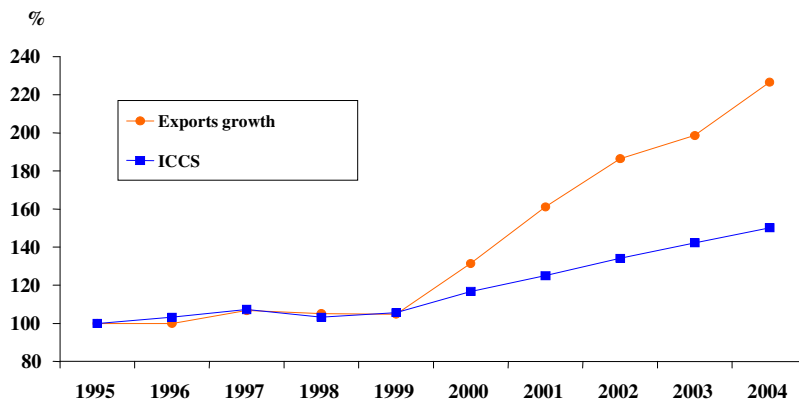
- *Detect the sectors which loose massively their share of the domestic market.* If these sectors have a low added value or if they are less intensive in human capital and don't yield significant financial advantages (in terms of balance of payments) for Romania, any kind of support should be avoided. If there are sectors with increasing share in the world or European economy, potentially job creating sectors, or if they are sectors with a strong horizontal effect, then analyses must be done on how to strengthen the local potential by allowed measures – levers to draw in foreign fixed assets and foreign knowledge, support to RDI activities in that particular sector, facilitate consultancy to find solutions to develop the sector etc.

- *Detect the sectors which loose massively their share of the foreign market.*

- *Detect the sectors which increase their share of the foreign market,* at the domestic and international levels. The sectors displaying an acute concentration (in the perspective of including this indicator) accompanied by market pressures and flows, than corrective measures must be elaborated.

The competitiveness evaluating index (ICCS) with 1995 as basis displayed a much less accelerated evolution than the dynamics of exports during 1994-2004. The lower ICCS values compared to the dynamics of exports shows that the increase of exports is not sustainable on the long term because it is not accompanied by positive evolutions of the other components (technology, structure and production) (Chart 1).

**Chart 1: ICCS vs. exports growth, total manufacturing industry (1995=100%)**



Source: IEM, calculated using Group of Applied Economics (GEA) procedure for ICCS, 2006

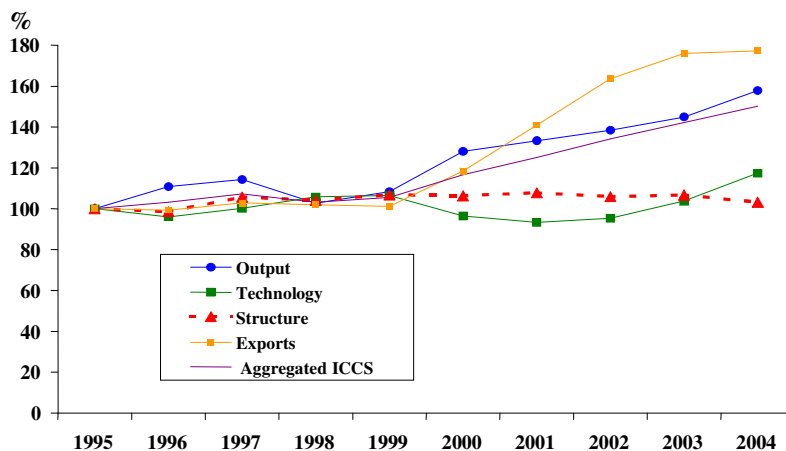
- *Determinants of competitiveness growth.* The *export* component was the main determinant of the ascendant evolution of the Romanian manufacturing industry competitiveness; the growth of the *production* component was the only element supporting the export and implicitly the competitiveness, particularly after 2000. The most accelerated growth rates of the index of sectoral competitiveness compared to 1995 was during 2000-2004, under the direct influence of the dynamics of export.

Chart 2 shows the slow or stagnant dynamics of the technological and structure components of the manufacturing industry competitiveness. The *technology* component had a slightly negative impact on the increase of competitiveness, while the *structure* component had an

even lower influence; these components displayed slower rates of growth or were quite volatile. The decrease of the *technology* component during 2000-2002 below the level of 1995 reflects the negative situation of RD expenditure allocation and of capital intensity, bearing an effect of attenuation on the growth of the competitiveness indicator. The unsustainable growth of the exports caused a wide gap between ICCS and the dynamics of exports. The *structure* component had a lower fluctuating evolution for almost all sectors. The evolution of this component should be, by the analysis of the indicators composing it, an immediate priority of the programs aiming to improve the competitive performance. Another general characteristic is the evolution of the *technology* component, completely inadequate, both for a country which has to recover large technological gaps, and for connecting to the knowledge-based economy.

One must not forget, however, that overall Romania, beyond the investments in acquisitions, the investments in research-development are extremely reduced in almost all sectors, situation which turns critical.

**Chart 2: ICCS and its components, total manufacturing industry (1995=100%)**

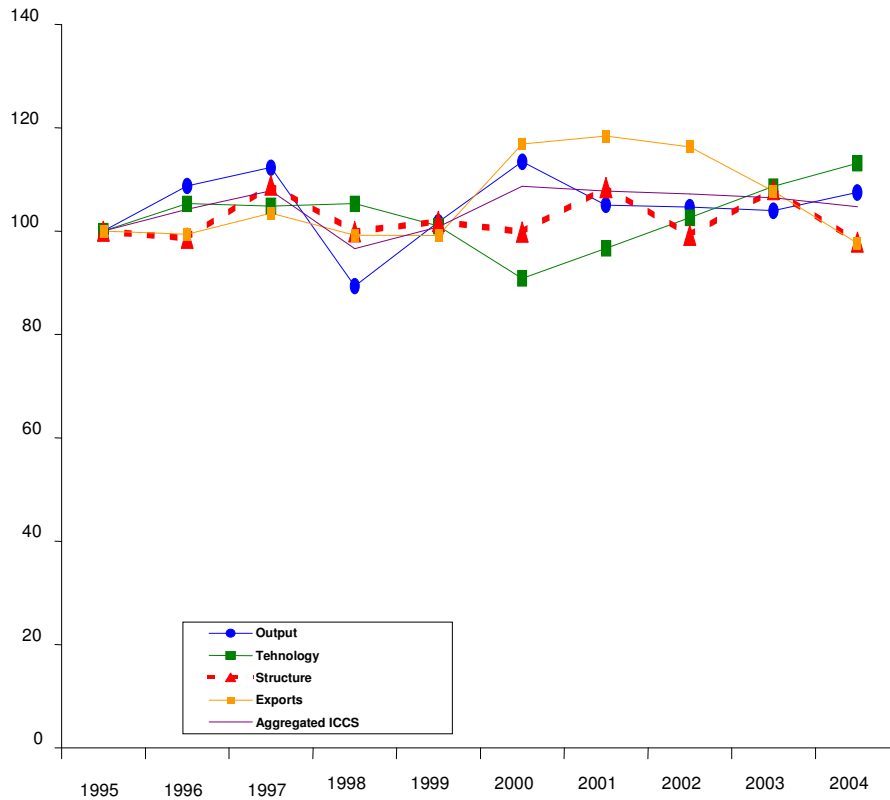


Source: IEM, calculated using Group of Applied Economics (GEA) procedure for ICCS, 2006

Overall the analysed period, the growth of the Romanian manufacturing industry competitiveness was continuous, but slow during the first 5 years; starting with 2000, the growth rate of competitiveness accelerated so that in 2004 ICCS reached the value of 150 (compared to 100 in 1995). If overall the 1995-2004 period, a trend of continuous increase of the manufacturing industry competitiveness compared to 1995 was noticed, the ICCS-based analysis of competitiveness increase shows the following:

- The manufacturing industry competitiveness increased slowly, with frequent fluctuations, which means that the process of competitiveness increase is not consolidated. This observation is also obvious if we observe the frequent fluctuations in the evolution of the indicator's components: export, production, structure, technology (Chart 3).
- Until 1999, ICCS displayed a marked decreasing trend with wide annual variations, with a strong growth in 2000, followed by a relative stagnation, with a slight decreasing trend in 2003 and 2004;

**Chart 3: ICCS and its components, total manufacturing (previous year =100%)**

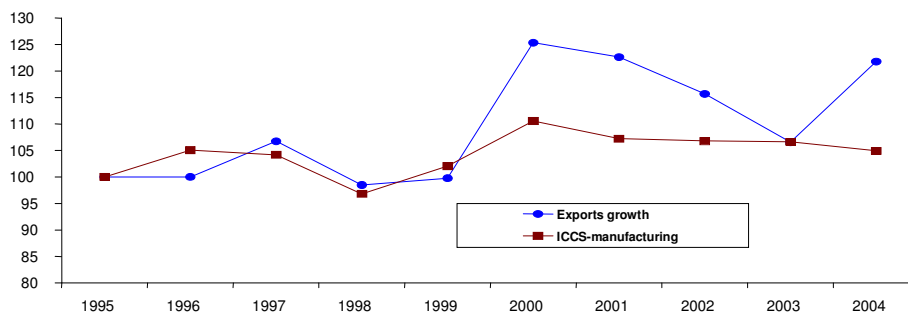


Source: IEM, calculated using Group of Applied Economics (GEA) procedure for ICCS, 2006

The *export* component was in this variant too, the determinant of ICCS variation, the correlation being obvious even in the years when competitiveness decreased and increased (2002-2004). The increase of components *technology* and *production* in 2002-2004 didn't compensate the decrease of the *export* component.

- A lower rate of growth was noticed in 2004 for the manufacturing industry competitiveness, under the conditions in which the accelerated dynamics of the exports was not accompanied by an increase in the world market share of the products of the Romanian manufacturing industry;

**Chart 4: ICCS vs. exports growth, total manufacturing (previous year = 100%)**



Source: IEM, calculated using Group of Applied Economics (GEA) procedure

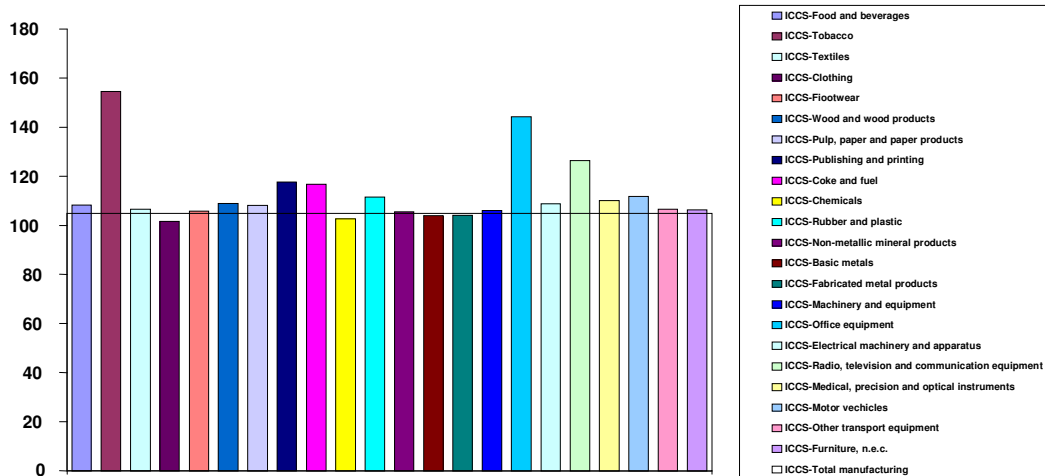
- The industries with the highest dynamics of the competitiveness during 1995-2004 were those linked to the evolution of the information society: equipment for *communications*, *computing technique* and *publishing houses-printing* (industry often ranked among the “creative industries”, particularly dynamic in the developed countries).
- Due to the low starting level, only the *equipment for communications* reached a top position (2) in the hierarchy of sector competitiveness at the end of period, the *equipment for the computing technique* ranking on the 8<sup>th</sup> position, and the *publishing houses-printing* barely on the 21<sup>st</sup> position.
- *Crude oil processing* holds the 4<sup>th</sup> position as dynamics and ranks the first in the hierarchy.
- A high dynamics was also noticed for the *tobacco industry*, but it barely ranks on position 20.
- *The road transportation means* also displayed a dynamics exceeding significantly the average, but the investments during the last years didn't reach yet a significant level in 2004.
- Good positions in 2002-2004, however, without displaying a high dynamics were noticed for the *food industry* and for the *wood manufacturing industry*, both intensive in autochthonous natural resources.
- *The rubber manufacturing industry and the plastics manufacturing industry* have a position above the average, both as evolution and as final standing.

### **3.2.1 Results concerning the increase of competitiveness in the sectors of the manufacturing industry**

I. The analysis of the average ICCS value for the period 1995-2004 (with index chain) in the manufacturing industry, compared to the composite indicator of the industrial sectors (branches) reveal the following aspects:

a) *Gains of competitiveness*. Of the 22 sectors from the manufacturing industry, 15 exceed the average level of growth of the manufacturing industry competitiveness, 3 sectors rank on middle positions, while the rest of 4 are positioned below the average level of growth of the manufacturing industry competitiveness.

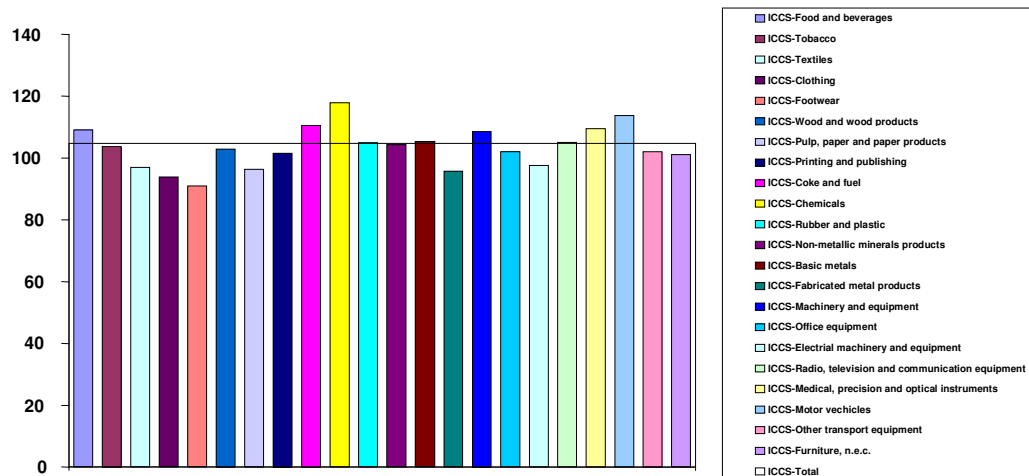
**Chart 5: Average ICCS yearly growth for 1995-2004 (total manufacturing and subsectors)**



Source: IEM, calculated using Group of Applied Economics (GEA) procedure for ICCS, 2006

b) *Decrease of competitiveness growth rate in 2004.* The ICCS for the manufacturing industry shows a slight depression of the competitiveness growth rate compared to 2003; significant mutations occurred at the intersectoral level which show a lower rate of growth for the competitive performance in many sectors. The most significant reductions in the growth rates for the competitive performance in 2004 compared to 2003 were noticed in the industries of leather, footwear, clothing, textiles and metallic constructions. The most important gains of competitiveness in 2004 compared to 2003 were noticed in the industries of chemical products, means for road transportation and parts, crude oil processing.

**Chart 6: ICCS yearly growth 2004/2003 (total manufacturing and subsectors)**



Source: IEM, calculated using Group of Applied Economics (GEA) procedure for ICCS, 2006

In 2004, of 22 sectors of the manufacturing industry, 6 exceeded the average level of competitiveness growth compared to the previous year (9 sectors less in 2004 compared to the 1995-2004 average), 12 sectors were below this level (4 in 1995-2004), while 4 sectors displayed the average level of the manufacturing industry (3 in 1995-2004).

The hierarchy of the industrial sectors according to the growth of the competitive performance shows significant mutations in 2004 compared to the 1995-2004 average (computed using chain-basis). If in TOP 1995-2004 there were 10 sectors with significant gains of competitiveness, in 2004 there were only 6 sectors, 3 of which are new sectors: 1. chemical products; 2. machinery, equipment; 3. food and beverages industry.

**Table 1: Hierarchy of the industrial sectors according to the growth of competitive performance (compared to the average ICCS for the manufacturing industry, variation from the previous year)**

Loc	TOP ICCS 1995-2004 Industry	TOP ICCS 2004 Industry
1.	Manufacture of tobacco products	Manufacture of chemicals and chemical products
2.	Manufacture of office machinery and computers	Manufacture of motor vehicles, trailers and semi-trailers
3.	Manufacture of radio, television and communication equipment and apparatus	Manufacture of coke, refined petroleum products and nuclear fuel
4.	Publishing, printing and reproduction of recorded media	Manufacture of medical, precision and optical instruments, watches and clocks
5.	Manufacture of coke, refined petroleum products and nuclear fuel	Manufacture of electrical machinery and apparatus n.e.c.
6.	Manufacture of rubber and plastic products	Manufacture of food products and beverages
7.	Manufacture of motor vehicles, trailers and semi-trailers	
8.	Manufacture of medical, precision and optical instruments, watches and clocks	
9.	Manufacture of electrical machinery and apparatus n.e.c.	
10.	Manufacture of wood and of products of wood and cork, except furniture	

Source: IEM, 2006

The traditional exporting sectors such as clothing, footwear, metallurgy, furniture *remained during the last years below the average level of the industry in terms of growth of the competitive performance, and 2004 stressed these trends.*

II. *Results of the analyses of the competitive potential for the foreign and domestic market, at the sectoral and intra-sectoral level in 2003-2005.* The survey of the industrial branches revealed:

- a) *industries mature on the domestic and foreign market, with a high coverage of the national market (domestic consumption) and strongly oriented towards export;*
- b) *niche industries oriented preponderantly towards export;*
- c) *industries with national vocation with a high coverage of the national market (domestic consumption) but poorly oriented towards export;*

d) so-called „immature industries”, which cover less than 50% of the consumption of the domestic market and direct less than 30% of their production towards export.

*The industries mature on the domestic and foreign market* were considered those industries which cover more than 50% of the domestic market and direct more than 30% of their production towards export. In 2003, only 5 of the 22 surveyed industrial sectors met these criteria, and each of them had a mature sub-branch. The 2003-2005 average reveals a progress for the number of mature industrial branches and sub-branches (9 branches, each with one or two mature sub-branches). The winning sub-branches *which became mature on the domestic and foreign market in 2003-2005* (and which are not included in this category in 2003) are: knitwear, embroidery (textile industry); clothing, textile underwear (clothing industry); steam generators (metallic constructions); wood packages (timber industry); games, wooden toys (furniture industry).

*Recommendations:*

- a. The field Ministries must become initiators/coordinators in *setting the priority direction for the use of state aids*, in accordance with the European legislation.
- b. The industrial policies must be corroborated with the other horizontal policies – environmental and RDI.
- c. The opportunities provided by the EU legislative framework for regional development must be used. The instruments used to implement the regional policies can be corroborated with domestic priorities of industrial policy (examples: enterprises located in disfavoured areas, which are in difficulty and under reorganisation, regional technological parks, etc).
- d. Cooperation with all the governmental institutions with decision power in the sphere of the SMEs, considering that the SMEs sector is still insufficiently developed in Romania compared to the European average.

### **3.3 Analysis of the foreign trade performance of the manufacturing industry<sup>90</sup>**

The analysis of the foreign trade structure function of the technology level, the standard Eurostat classification, determines the following four types of industrial branches:

a) *group of „high-tech” branches*, which includes the following NACE divisions and groups: Manufacture of medicines, pharmaceuticals and naturist goods (244); Industry of means for computing and office technique (30); Industry of equipment for radio, television and telecommunications (32); Industry of medical equipment and instruments, precision, optical and photographic instruments, horology (33); Constructions and reparations of airplanes and ships (353).

b) *group of „medium high-tech” branches*, which includes: Manufacture of chemicals and chemical products (24), except for medicines (244); Manufacture of machinery and equipment (29); Manufacture of electrical machinery and apparatus (31); Manufacture of motor vehicles, trailers and semi-trailers (34); Manufacture of other transport equipment (35), except for the Constructions and reparations of ships (351) and Constructions and reparations of airplanes and ships (353).

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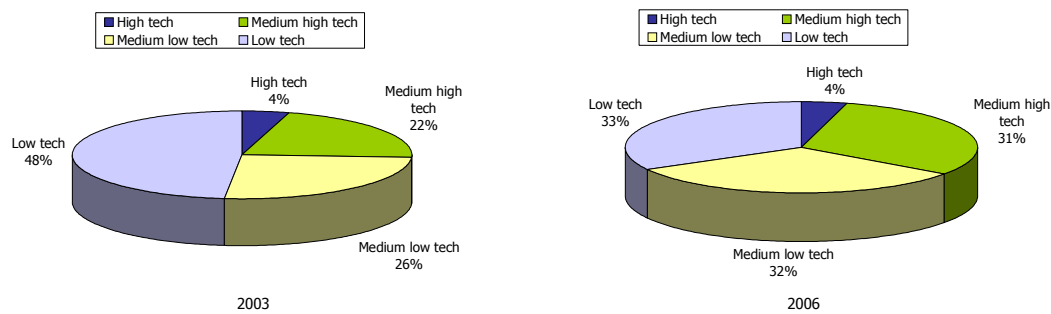
<sup>90</sup> The chapter is based on C. Ciupagea, R. Gheorghiu, V. Niță, M. Unguru, R. Voinescu, *Possibilities to reduce the trade deficit*, study elaborated within the framework of PHARE program RO2003/005-551.02.03, February 2007.



c) group of „medium low-tech” branches, with the following NACE divisions and groups: Manufacture of coke, refined petroleum products and nuclear fuel (23); Manufacture of rubber and plastic products (25); Manufacture of other products from non-metallic minerals (26); Manufacture of basic metals (27); Manufacture of fabricated metal products, except machinery and equipment (28) and Constructions and reparations of ships (351)

d) group of „low-tech” branches, which includes: Manufacture of food products and beverages (15); Manufacture of textiles (17); Manufacture of wearing apparel; dressing and dyeing of fur (18); Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear (19); Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (20); Manufacture of pulp, paper and paper products (21); Publishing, printing and reproduction of recorded media (22); Manufacture of furniture; manufacturing n.e.c. (36) and Recycling (37).

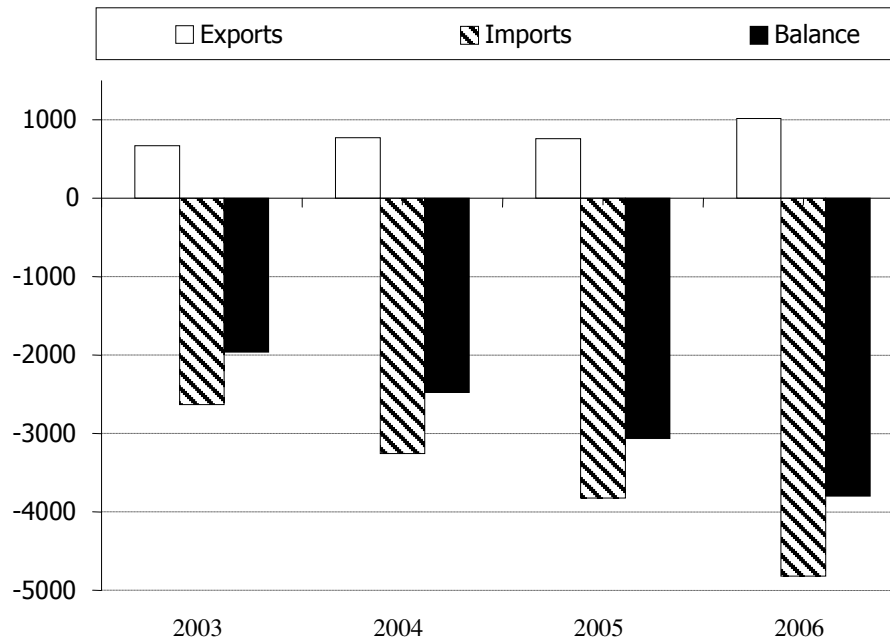
**Chart 7: Structure of manufacturing industry exports in 2006, compared to 2003<sup>91</sup>**



The Romanian exports are dominated by products of the *low-tech* and *medium-low-tech* industries, their total weight decreasing from 74% in 2003, to 71% in 2006. The strongest decrease was observed in the *low-tech* products, from 48% of overall Romanian exports in 2003, to 33% in 2006. The explanation lies in the lower exports of the cellulose and paper and clothing branches and in the lower dynamics of the *low-tech* products compared to the higher technology branches.

**Chart 8: Trade of the ‚High-tech’ industrial branches\* (Mil euro)**

<sup>91</sup> Source: C. Ciupagea, R. Gheorghiu, V. Niță, M. Unguru, R. Voinescu, *cited work*

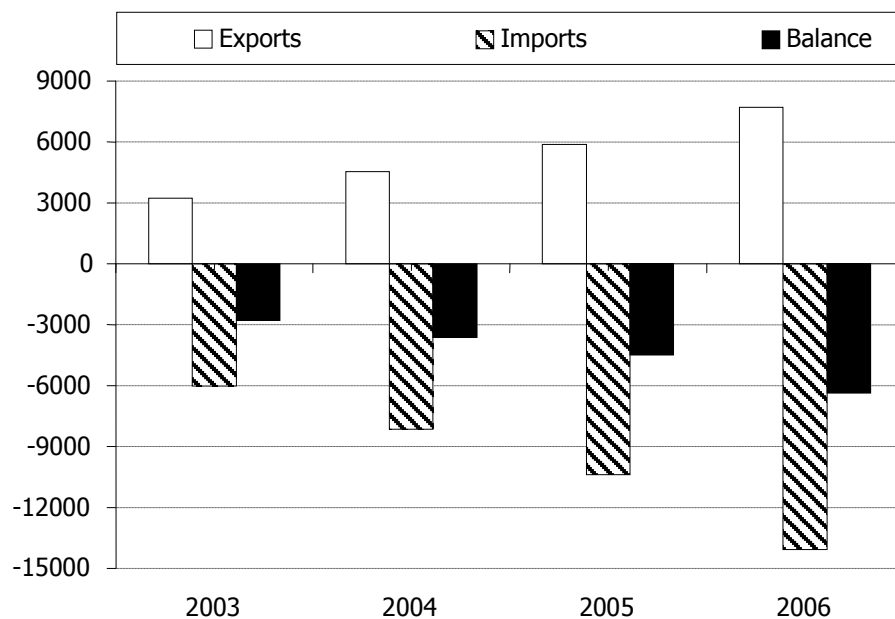


Note: \*) the group includes NACE branches and sections: (24.4) +30+32+33(+35.3)

The highest, and increasing steeply, deficits among the ‘High-tech’ industrial branches were observed in the:

- Manufacture of radio, television and communication equipment and apparatus (32), whose deficit increased from –585 Mil. euro to –1325 Mil. euro in 2006;
- Manufacture of medicines, pharmaceuticals and natural goods (244), whose deficit increased from –543 la - 1233 Mil. euro over the same period.

**Chart 9: Trade of the ,Medium-high-tech’\* industrial branches\* (Mill euro)**

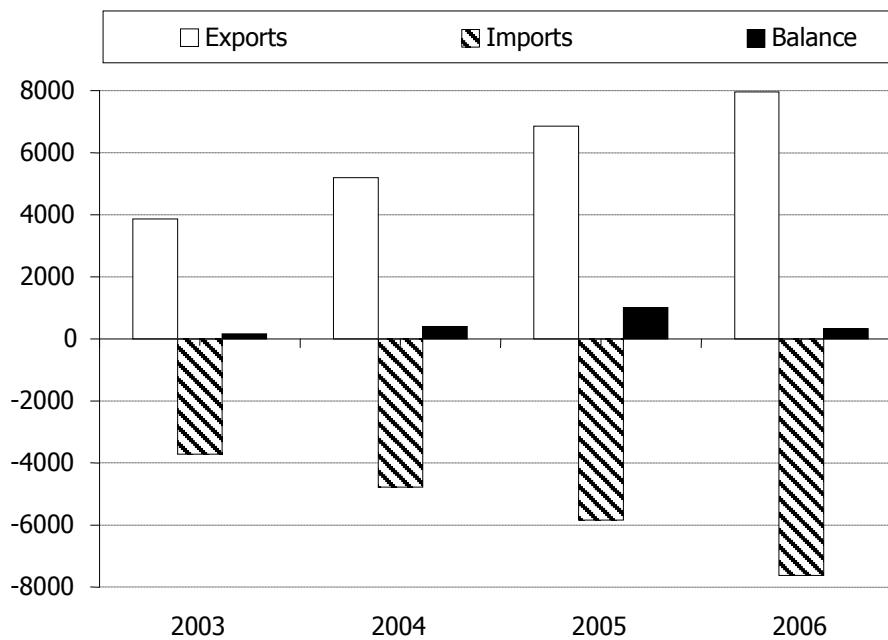


Note: \*) the group includes NACE branches and sections: 24(-24.4) +29+31+34+35(-35.1-35.3)

The contributions to the deficit of this group come from the:

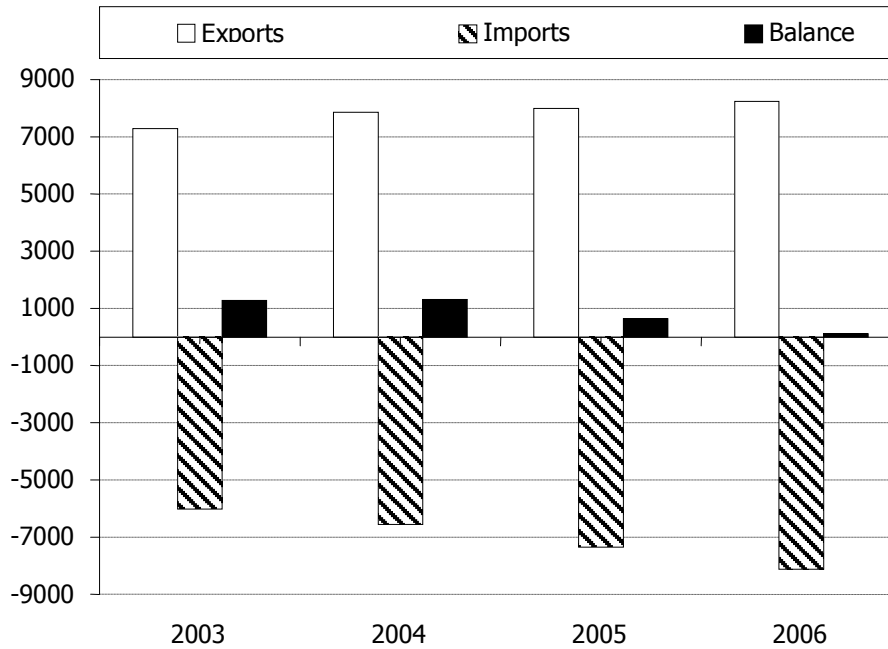
- Manufacture of motor vehicles, trailers and semi-trailers (NACE 34) (whose deficit increased from - 691 Mil euro, in 2003, to - 2763 mil. euro in 2006);
- Manufacture of machinery and equipment n.e.c. (NACE 29), whose deficit was -1275 Mil euro, in 2003, and doubled until 2006;
- Manufacture of chemicals and chemical products (NACE 24), except for medicines (group 244), with a deficit of -1282 Mil euro in 2006.

**Chart 10: Trade of the ,Medium-low-tech'\* industrial branches\* (Mil euro)**



Note: \*) the group includes NACE branches and sections: 23+25+26+27+28(+35.1)

**Chart 11: Trade of the ,Low-tech'\* industrial branches\* (Mil euro)**



Note: \*) the group includes NACE branches and sections:  
15+16+17+18+19+20+21+22+36+37

Within the group of ‘Low-tech’ branches, on the positive part of the scales are Manufacture of wearing apparel; dressing and dyeing of fur (18) followed, at a great distance, by Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials (20) and by Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear (19). The surplus for the clothing articles is decreasing, though, due to an increasing trend of the outsourcing activities (active improvement), particularly in the area of ready-made clothing.

On the other side of the scales are the branches with a strong deficit: Manufacture of textiles (17), with a slightly decreasing evolution due to outsourcing and by the Manufacture of food products and beverages (15).

Because the evolution of the trade in the other branches displayed a very slow dynamics, we can say that the deterioration of the balance for the *low-tech* group comes from the decrease of the trading surplus for ready-made clothes and clothing, on the background of an increasing deficit of the food industry.

**Table 2: NACE classes with the steepest decrease of the trade balance - 2005-2006 average minus 2003-2004 average**

NACE code	Denumire clasa CAEN	Variația medie anuală a soldului (Mil euro)
1110	Extraction of crude petroleum and natural gas	-2149
3410	Manufacture of motor vehicles	-1324

2442	Manufacture of pharmaceutical preparations	-404
3220	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	-350
1511	Production of preserving of meat	-257
2710	Manufacture of basic iron and steel and of ferro alloys (ECSC)	-205

The 6 classes sum 48% of the negative variation of the balance, of the total 183 classes which displayed such a variation (or 76% of the total variation of the trade balance of Romania).

The structural analysis reveals that the **Romanian exports are dominated by low-tech and medium-low-tech products**. There is a strong decreasing trend of the share of *low-tech* products, from 48% of overall Romanian exports in 2003, to 33% in 2006, because of lower exports of the branches of cellulose and paper and ready-made clothes and to rather slow dynamics of the other branches of this group.

On the other hand, the **imports are dominated by medium-tech products**, whose share increased from 33% in 2003 to 42% in 2006, due to the massive growth, over the last four years, of the imports of means of road transportation, and due to the imports of machinery and equipment, of electrical machinery and equipment.

The positive trading balance of the *medium-low-tech* and *low-tech* branches are likely to vanish if the trend of the last two years will continue. An alarm signal must be generated for the *low-tech* group of branches whose trading surplus decreased by about 1.2 billion euro over the last 4 years. The shrinking trade surplus registered in the ready-made clothes and in the clothing industries and the simultaneous growth of the deficit for the food industry are the main explanations of the deteriorating trading balance of the *low-tech* group of branches.

Six NACE classes, briefly analysed *infra*, sum up 48% of the negative variation of the balance, of the 183 classes which displayed such a variation (or 76% of the total variation of the trading balance of Romania): Extraction of crude petroleum and natural gas; Manufacture of motor vehicles; Manufacture of pharmaceutical preparations; Manufacture of radio-television broadcasting equipment; phone and telegraph equipment and sets; Production and preservation of meat; Production of elementary forms of ferrous metals and production of iron alloys.

- The three-fold growth of the value of hydrocarbon imports, particularly of crude oil, results more than 50% from the increasing prices, the balance being due to the increase of the domestic consumption. Given the shallow perspectives for the growth of the domestic production and the higher demand due to the increasing economic activities, these imports must be seen from the broader perspective of the input-output relation, i.e. the resulting economic benefits. At the same time, considering the previous experience with the evolution of prices, the medium and long-term optimisation of the hydrocarbons consumption becomes of strategic importance, with implications on the industrial structure, transportation infrastructure, research-development etc.
- The industry of the road transportation means revived its production of cars due to the success of Renault, but the production of road transportation means for cargo isn't yet supported by sufficient investments. The development of the industries related to the car manufacture industry may be the premises for the establishment of

clusters stimulating investments in the production of road transportation means for cargo, traditional field of the Romanian economy.

- The domestic consumption of pharmaceutical preparations increased and will probably continue to do so, the per capita values still being far from those of the developed EU countries. The medicines market is largely determined by the technological advancement, and the domestic and foreign competitiveness of the Romanian pharmaceutical industry can only be restored by major investments in research-development.
- The growth rate of the recent years in the field of the communication equipments, of mobile phones, particularly, will decrease considerably as the saturation level approaches, but the absolute values will remain high. The Romanian field industry needs strategic investors which to restore the declining production of the past years.
- *Meat production and processing* is a branch which, despite the huge national potential, could not meet the growing demand for consumption due to the increase of incomes. The causes must be sought first in the stage of development of the animal production farms and in the low level of industrialization of animal slaughtering.
- The increasing domestic demand for the elementary forms of ferrous metals and for iron alloys could be covered from the domestic production only for those products manufactured in Romania. On the medium term, the increasing demand may stimulate the diversification of the domestic production.

### **3.4 The CE proposed matrix approach to industrial policy**

The matrix approach of the industrial policy means simply to add a sophisticated sectoral perspective to the horizontal approaches which remain priority. The philosophy of this approach is, however, fundamentally different from the sectoral policies promoted before the Maastricht Treaty. Currently, the horizontal approach remains priority, but it is admitted that the effect of the horizontal policies on the different sectors can be significantly different; complementary sectoral measures may thus be necessary to balance this effect and to really provide equal opportunities for all economic agents. Essentially, this approach leaves from the idea that the different economic sectors may need different mixes of industrial policies so as to achieve their highest potential. The conceptual bases of the matrix approach of the industrial policy are described in various academic sources, among which Enterprise Europe<sup>92</sup>, Aiginger and Sieber (2006)<sup>93</sup>, or in the papers from the special issue of the Journal of Industry, Competition and Trade<sup>94</sup> dedicated to the new industrial policy, and frequently cited in this work. The approach originates in the research activity of the European Commission (EC) during 2004-2005 presented in the communication CE COM(2005) 474<sup>95</sup>.

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<sup>92</sup> [http://ec.europa.eu/enterprise/library/enterprise-europe/issue20/pdf/ee20\\_en.pdf](http://ec.europa.eu/enterprise/library/enterprise-europe/issue20/pdf/ee20_en.pdf)

<sup>93</sup> Aiginger, K. si Sieber, S., The Matrix Approach to Industrial Policy, International Review of Applied Economics, Vol 20, no. 5 December 2006 , pp. 573 - 601

<sup>94</sup> Journal of Industry, Competition and Trade, Industrial Policy: Past, Diversity, Future: Introduction to the Special Issue on the Future of Industrial Policy, Vol. 7, Nr 3-4 / December, 2007, Springer Netherlands

<sup>95</sup> *Implementing the Community Lisbon Programme: A policy framework to strengthen EU manufacturing - Towards a more integrated approach for industrial policy*, {COM(2005) 474 final} [http://ec.europa.eu/enterprise/enterprise\\_policy/industry/com\\_2005/com\\_2005\\_474.pdf](http://ec.europa.eu/enterprise/enterprise_policy/industry/com_2005/com_2005_474.pdf)

### **3.4.1 Sectoral analysis**

To construct this approach, the EC made a thorough analysis of 27 industrial and construction sectors in terms of competitiveness and its factors. The current state and the competitive position on the international markets are presented for each of the considered industrial branches, using the added value, occupation and the international and intra-European trade deficit as indicators. The type of analysis of competitiveness is very similar with the one done in the IEM study on the competitiveness of the manufacturing industry (see 3.2), particularly because it distinguishes between the internal competitiveness and the international competitiveness (broad meaning of competitiveness).

The sectors were assigned to four large groups to enable de identification of the common elements:

1. **Food and Life Science Industries** (food, drink and tobacco industries, cosmetics, pharmaceuticals, biotechnology, medical devices);
2. **Machine and Systems Industries** (ICT, mechanical engineering, electrical engineering, motor vehicles, defence industries, aerospace, shipbuilding);
3. **Fashion and Design Industries** (textile industry, leather and leather goods, footwear, furniture);
4. **Basic goods and for intermediary consumption** (non-energy extractive industries, non-ferrous metals, cement and lime, ceramics, glass, wood & products of wood, pulp, paper & paper products, printing & publishing, steel, chemicals, rubber and plastics, construction).

This classification and the definition of the industries taken into consideration don't match completely the European classification of the economic activities (NACE), which makes it difficult to reproduce it at the country level without involving additional statistical and analytical efforts. The classification is not exhaustive at the level of the industrial sector, excluding for example the extraction of crude oil and coal, but also the production of certain transportation means.

### **3.4.2 Policy analysis**

The domains of economic policies included in the analysis were largely those proposed by CE COM(2004) 474<sup>96</sup> as being particularly relevant for the functioning of the industry, which are: implementing a competitive, single market which promotes competition; stimulate the research, innovation and education, administrative regulations favourable to business development; existence of a real synergy between the pro-competitiveness policies, energy and environmental; guarantee for the participation on the global market under conditions of equality and facilitation of the economic and social cohesion. All these political dimensions are horizontal. They are not exhaustive, but rather selected starting from the special impact they have on the sectoral productivity and international competitiveness.

To operationalise the analysis, the concrete measures corresponding to the areas described above were divided into 6 groups:

1. **Investment in knowledge** (stimulate R&D and innovation, copyright and piracy, quality of the human factor, SMEs access to financing);
2. **Regulation system** (administrative burden, policies for the functioning of the domestic market, regulations for health protection and work protection, technological standards, educational strategies);

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<sup>96</sup> *Fostering Industrial Change: an Industrial Policy for an Enlarged Europe*, COM(2004) 274.

3. **Energy and environmental policies** (response to the effect of global warming, policies for industrial wastes management, measures to reduce the water consumption and the preserve its quality, measures to reduce air pollution and reduction of the energy consumption);
4. **Trade policies** (ensure the easy access to sales markets, ensure the easy access to resources, distorting trade policies – such as dumping or export subsidies, other legislative aspects concerning the international commercial treaties);
5. **Management of the structural changes** (related particularly to the goal of ensuring social cohesion; policies of anticipation - including using the input-output analysis – and of prevention of the net effect of the structural changes and of tertialization on occupation and social cohesion);
6. **Management of the sectoral specificities** (for instance, the policies of property on the land in the case of extractive industries).

The detailed description of these groups of measures, of their rationale, as well as of the connection between the political areas presented above can be found in CE communications COM (2004) 474 and COM (2005) 474. Aiginger (2007) introduces indicators for the evaluation of the quality of these policies at the national level.

### **3.4.3 Matrix of branches and policies**

The sectoral analysis yielded not just the competitive position of the different branches, bit also the evaluation of the relevance and sectoral priority of the different key-policies described in the previous subchapter. This analysis done by CE was performed with the collaboration of the main actors and representatives of the member states<sup>97</sup>. The evaluation of the sectoral impact of the horizontal policies is synthesized in CE – SEC(2005) 1216<sup>98</sup>.

The analysis resulted in a systematic identification, both quantitative, but especially qualitative, of the challenges of industrial policy at the branch level. EC communication SEC (2005) 1216 describes these challenges in detail, explaining and illustrating their relevance to the competitiveness of the industrial branches in the proposed classification. The results of the sectoral and policies analysis are presented synthetically and simultaneously in matrix form, with the industrial branches as matrix lines and with the political measures as matrix columns. The matrix cells ( $a_{ij}$ ) are marked with an X in the cases when the political measures from column  $j$  are considered to be of overwhelming importance for the sector listed on row  $i$ . Therefore, the absence of an X in a given cell ( $a_{ij}$ ) doesn't mean that the policy or political challenge  $j$  is not important to branch  $i$ , but that it doesn't appears to be priority.

### **3.5 The matrix approach in the case of Romania**

The following section will attempt to integrate, with the help of the matrix approach, the results of three distinct analyses presented previously.

The first one is the *relative position of Romania regarding the quality of applying the various policies relevant to the industrial development* (analysis based on Aiginger (2007), explained in chapter 1.2).

Second, it is noteworthy that *these political areas* can also be found in the analysis from chapter 1.3, where the policies *are classified in policies managed by the community and policies to be enforced by the national governments*. The analysis can also be corroborated

<sup>97</sup> [http://ec.europa.eu/enterprise/enterprise\\_policy/industry/com\\_2005/com\\_2005\\_474.pdf](http://ec.europa.eu/enterprise/enterprise_policy/industry/com_2005/com_2005_474.pdf)

<sup>98</sup> Commission Communication "European Industry: A Sectoral Overview" - SEC(2005) 1216 final of 5.10.2005, [http://ec.europa.eu/enterprise/enterprise\\_policy/industry/com\\_2005/sec\\_2005\\_1216.pdf](http://ec.europa.eu/enterprise/enterprise_policy/industry/com_2005/sec_2005_1216.pdf)



with the discussion from chapter 1.3.2, where we attempted to review the particularities of the new member states' (EU8) economies relevant to Romania, as well as the elements differentiating these countries from EU15 countries in the formulation of the national industrial policies. Thus, even from this stage, we might make a first delimitation of the political areas in which Romania lags and where the national policy makers have available a wide range of possibilities of action. The limitation at this level doesn't allow, however, revealing the sectoral dimension and therefore the choice of those options which would ensure the highest positive impact within the concrete context given by the structure of the national economy and by the competitiveness of the Romanian industrial branches. Therefore, we built a matrix of ranches/policies similar to the one proposed by the CE, considering the *results of the competitiveness analysis of the Romanian manufacturing industry* shown in chapter 3.2.

Essentially, the correlation of the three analyses through the matrix model applied for Romania will allow us to show those areas of industrial policy where not only does Romania lag mostly, but where the policies decided at the national level may have an important positive impact on the industrial development and competitiveness, taking into account the concrete situation of the Romanian industry.

However, at this moment we don't have all the data and information required to make a full matrix analysis accordingly to the CE example. Furthermore, an exercise of such extent is way beyond the scope of this paper. We propose here just a schematic analysis which may be the starting point for a potential detailed study, while today it may be a versatile instrument to prioritize the area of policy and the evaluate in principle the expected results.

### **3.5.1 Construction of the matrix of branches/policies in the case of Romania**

The construction of the matrix follows the same logic and, as much as possible, the same structure as the one proposed by the CE.

We made several modifications on the matrix (imposed by the lack of data/information, by the need of harmonization with the other instruments of analysis or by the intention to show some particularities of the Romanian industry) as follows:

1. **On the structure by branches (matrix lines)**, mainly due to the lack of statistical data with the level of detailing required by the European matrix model. We used the CAEN branches, also used in the competitiveness analysis described in chapter 3.2. This means that we excluded from the analysis the extractive industries and the constructions. The main limitation, however, is that we could not relate to the situation of Romania in sub-branches which are crucial even for the European competitiveness as a whole, namely: the industries of cosmetics, pharmaceuticals, medical instruments, aeronautics, defence and ship building, glass, ceramics. On the other hand, unlike in EU, the sectoral approach proposed here is exhaustive, at least at the level of the manufacturing industry.
2. **On the political challenges taken into consideration (matrix columns)**, for clarification, simplification and harmonization with the other instruments of analysis, as well as to stress some characteristics of Romania (for instance we introduced the *Construction of technological infrastructure, Public acquisitions, Liberalization of the network industries* and the *State aid* as challenges of industrial policy). Out of lack of detailed information and for simplification we cumulated in a single column the environmental political challenges. Having in view that in the case of Romania there are no distorting political measures in the field of the foreign trade and its *de facto* liberalization occurred in, as early as, 1994, we formed the group *Markets and networks* instead of the one dealing with the trading policies. Of course, the community policies, as well as the different commercial treaties in which Romania is

part, may play the part of factors of sectoral competitiveness. Taking into consideration this political area in a matrix analysis at the country level requires, more than any other group of political measures, a distinct study and careful documentation. We introduced a column which shows the rank of the particular branch in terms of competitiveness according to the IEM study on the competitiveness of the manufacturing industry (see 3.2). We didn't refer to aspects which are purely sectoral (last column of the CE matrix).

**3. On the effects of the political challenges at the branch level (matrix cells).**

We started from the idea that the positioning of the X within the matrix is the same for Romania as for the EU. In principle, there are few arguments which may support the contrary, but the hypothesis should be confronted with the results of sectoral analyses similar to the ones done by the CE for the EU as a whole. For the newly introduced columns we relied on expert opinions or on varied studies from the Romanian field literature.

**Table 4: Matrix for the industrial policies in Romania**

Industry			Investment in knowledge				Better regulation			Environment	Markets and networks				Sp
			R&D/Innovation	IPR, Counterfeiting	Skills	Access to finance for SMEs	Administrative burden/Complexity of sectoral regulation	Health and Safety	Tech. standards	Quality and regulation of environment	Liberalisation of network industries	Build-up of technological infrastructure	Restructuring and structural change	Public procurement	
Food and Life Science Industries	Manufacture of food products and beverages	3	X				X	X		X			X	X	
	Manufacture of tobacco products	20	X				X	X		X					
	Manufacture of medical, precision and optical instruments, watches and clocks	12	X		X	X	X	X	X					X	
and Systems	Manufacture of office machinery and computers	8	X	X	X	X			X	X	X	X		X	

*European Institute of Romania – Strategy and Policy Studies (SPOS 2007)*

	Manufacture of radio, television and communication equipment and apparatus	2	X	X	X	X	X	X	X	X	X	X	X	
	Manufacture of electrical machinery and apparatus n.e.c.	10	X	X		X								
	Manufacture of machinery and equipment n.e.c., (excl. electrical and optical)	19	X	X	X	X								
	Manufacture of motor vehicles, trailers and semi-trailers	15	X	X	X		X						X	
	Manufacture of other transport equipment	22	X	X	X								X	(shipl
Fashion and Design Industries	Manufacture of wearing apparel; dressing and dyeing of fur	9	X	X	X								X	
	Manufacture of textiles	11	X	X	X				X				X	
	Manufacture of leather and leather	14	X	X	X					X			X	

*European Institute of Romania – Strategy and Policy Studies (SPOS 2007)*

	products															
	Manufacture of furniture; manufacturing n.e.c.	6	X	X	X					X			X	X		
	Manufacture of wood and wood products	4	X		X				X	X						
Basic and intermediary goods industries	Publishing, printing and reproduction of recorded media	21	X		X					X		X	X	X		
	Manufacture of basic metals	17	X		X					X	X		X			
	Manufacture of coke, refined petroleum products and nuclear fuel	1	X		X					X	X					
	Manufacture of pulp, paper and paper products	7	X							X		X				
	Manufacture of rubber and plastic products	5	X							X	X					
	Manufacture of chemicals and chemical products	18	X				X (pharmaceutics & biotechnology)		X (biotechnology)	X			X	X		X (s; textil)

*European Institute of Romania – Strategy and Policy Studies (SPOS 2007)*

Manufacture of other non-metallic mineral products	16		X (glass & ceramics)	X			X		X	X		X	X	
Manufacture of fabricated metal products, except machinery and equipment	13	X				X			X					

### **3.5.2 Horizontal industrial policies and the handicaps of the industrial/sectoral policies from Romania**

The horizontal policies, represented by the matrix columns, may be grouped in:

A1. Framework-policies (largely imposed by the participation in the single market and in the European Treaties):

- Patenting system;
- Alleviate the administrative burden;
- Standardize;
- Liberalize the network industries;
- State aid policy.

A2. Horizontal policies *per se* (promoted by the EU and supported by, but not compulsory, common policies)

- Research-development policy;
- Human capital formation policy;
- SME access to financing;
- Build up the technological infrastructure;
- Globalization and tertialization (construct the infrastructure of services);
- Policies of reorganization;
- Public acquisitions.

A3. Non-industrial policies affecting directly the industry

- Environmental policies.

The comparative analysis of the horizontal industrial policies performance in Romania based on the methodology elaborated by Aiginger and Sieber (2007) showed a series of serious handicaps compared to most other EU member states, which may have serious long-term consequences on the development of most sectors of the manufacturing industry. The most dramatic lags are in the following areas: investments in knowledge (human capital quality and research-development); infrastructure of the knowledge society (technological infrastructure) and services infrastructure (globalization and tertialization). Important progresses still are required in the business environment (regulatory framework) and in the state aid. The conclusion of our survey was that the industrial policy in Romania is poorly structured or with little coherence in promoting a future-oriented economy and that a European future-oriented industrial policy can not be achieved in Romania without a reform of the human capital training. From the perspective of the globalization and tertialization, the competition policy is probably one of the most efficient instruments of the industrial policy.

The horizontal policies in which Romania is deficient are influencing crucially sectors which the competitiveness analysis identified as ranking among the most performing. Synthesizing the analysis matrix for the top five, most competitive sectors of the Romanian industry in 2004, we observe that much of the horizontal policies with critical impact on the sector are deficient in Romania.

Industry	Rank	in	Number	of	Number of deficient
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	<b>competitiveness analysis</b>	<b>industrial policies with outstanding important for the sector</b>	<b>policies in Romania</b>
Manufacture of coke, refined petroleum products and nuclear fuel	1	4	2
Manufacture of radio, television and communication equipment and apparatus	2	11	5
Manufacture of food products and beverages	3	7	3
Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	4	4	3
Manufacture of rubber and plastic products	5	3	1

The data used to make the competitiveness analysis are from 2004. It is important to be aware that, as revealed by a previous analysis (Croitoru, Rusu si Tarhoaca), the indicators of the comparative advantage and of competitiveness vary in time and that the “predictions concerning the comparative advantage are extremely difficult in a transition economy, even on the short term; there is a very high probability that the initial predictions are negated by the subsequent evolutions”.

Hence a considerable risk of the selective industry targeting based on this type of analysis, which is *to support inefficient industries on the long term* and to contribute to the delay of the structural adjustment of the industry. A look at the top five, most competitive sectors of Romania, according to the indicators calculated by IEM/GEA strengthens this concern because *four of the top five, most competitive, sectors are not “sophisticated”, technologically advanced and intensive in using human capital or future-oriented.* (see chapter 3.2). The sector with the highest *potential* orientation towards the future, equipments for Radio-TV and communications, depends critically on the performance of a wide range of horizontal policies, in five of which Romania displays serious handicaps at the international level.

A more solid approach would be to notice, based on the competitiveness analysis and on the matrix analysis, that of the 22 analysed sectors:

- all are crucially influenced by research-development – area of horizontal policy in which Romania ranks among the last EU countries;



- over 60% are crucially influenced by the quality of the human capital, area of horizontal policy in which Romania has the worst performance from EU;
- the performance of over 50% of the sectors depends on the establishment of the infrastructure of services, issue in which Romania lags very much;
- 45% are influenced by the regulatory framework where, again, Romania still needs significant progresses;
- two of the top ten most competitive sectors are strongly dependent on the construction of the technological infrastructure.

*Periodical sectoral analyses* are required in order to implement a consistent system of horizontal policies, which to highlight the most important factors influencing the dynamics and competitiveness of the industrial sectors.

The initiatives corresponding to the framework policies: IPR; the initiatives for legislative simplification; standards assumed by the local policies; make a documented implementation plan for the impact of these measures on the Romanian industry and on its competitiveness.

Concomitantly, ***the most efficient modalities to participate in the initiatives of horizontal policy must be explored, such as R&I monitoring or Skills, industry and Services.*** These areas being the most problematic for Romania, this exploration should ***seek to obtain the highest synergy with the local initiatives.***

The quality of the environmental regulations influence, within the matrix framework, over 70% of the analyzed industrial sectors. Hence, in the field of the environment (initiatives *Competitiveness, Energy and Environment* and *Action Plan for Sustainable Industrial Policy*) a proper balance must be achieved between the duty to introduce these measures and the cost for each single sector.

## **4 Conclusions and suggestions**

The traditional point of view on national champions-based industrial policies starts to loose followers even among the European policy makers. On the other hand, the market which is left free in a world environment of globalization and internationalization gives birth to oligopolies and flaws of the competitory mechanisms generated by the higher world scale concentration of power in the private sector than in the national public sectors.

The European Union has revised its standpoint on some interventionist policies proposing a new approach of the industrial policy, starting from the correlated and consistent use of horizontal policies which to yield the global desiderates of: increase EU economy competitiveness at a higher rate than other strong world economies; increase the welfare and social cohesion status of the EU population, which to include a higher purchasing power and a higher potential for job creation, both desiderates being in the core of the new Lisbon Strategy concept.

Admitted into the EU at the beginning of 2007, Romania has to implement many of the European common policies but, at the same time, it has to conceive its own industrial policy which to take it to a higher level of competitiveness relatively closer to the EU average and increasing faster than it; Romania has to make sure that the system of firms operating throughout the country join the single European market without syncope, stumping and relative disadvantages, so that the possible lags inherited at accession don't affect the standard of living of the Romanian population and so that the economy can enter on the track of long-term sustainable development.

***Is it necessary for the state to intervene by industrial policies in the functioning of the Romanian economy?*** This is one of the major questions to which the policy makers would like to have a quick answer.

The time of subsidies for sectors seems to have passed despite the nostalgic ones and despite those seeking personal gain by discretionary administrative action in the service of certain companies. Too many examples of economic inefficiency undermined the myth of the “good public administrator”.

On the opposite side, the use of horizontal policies produces discriminatory concentrations of resources. When something is offered too the entire population without monitoring the distribution, the strong ones will end by getting hold of the surplus of resources getting thus even stronger. This assertion is valid both for the individuals and for the firms. The examples are numerous, but we will give just one: the public investment in research are drawn by the firms from research&development-intensive sectors, such as the pharmaceutical industry, without getting the expected result of an improved state of health of the population or without achieving a higher capacity to prevent the burst of epidemics.

Then, might it be better not to take any action? The correct answer is probably that, there is always a middle way: ***it is a good think to monitor permanently the entire national economic system, but the interventions as horizontal policies must not be precipitous; they should try to correct the economic concentrations (public or private) and to optimise the system from the social point of view.***

The conclusions of this paper on the state of the Romanian economy immediately after the accession into the EU in terms of the opportunity of using industrial policies have been presented partially in the previous chapters (2 and 3).

The recent programmatic documents on the sectoral policies in Romania, whose development took into account the significant role and share of the manufacturing industry within the GDP, production, occupation and exports of Romania<sup>99</sup>, stipulated the following *directions of action in the industrial policy*:

1. Set the *modernization, efficientization and growth of competitiveness of the manufacturing industry* as priority of the industrial policy. The competitiveness of each branch must be evaluated and the branches with competitive potential must be supported, particularly the *medium-* and *high-tech* branches. The evaluation of competitiveness of the low-tech, energy, materials and natural resources-intensive branches must be completed by analyses of environmental impact, so as to ensure a sustainable management of the natural sources.

2. Correlation of the *Sectoral Plan for the research-development in industry* with the *Program for the growth on industrial products' competitiveness*, so as to provide RDI assistance to the economic operators from the manufacturing industry in areas such as: the increase of energy efficiency; integrated control and decrease of pollution; promotion of clean technologies; promote the renewable resources and the ecological resources; improve waste recycling rate.

3) Furthermore, a *unit for the coordination of priorities P1) and P3)* might be created within the Ministry of Economy and Finances which, in collaboration with the Ministry of Education and Research (particularly through the NPRDI, areas *Innovation* and *Partnerships in priority areas*) and with the Ministry of the Environment and Sustainable Development, to offer the economic operators from the manufacturing industry assistance in *research-development* and in *adopting the new technologies* needed to increase competitiveness, the efficiency of energy and natural resources utilization and to alleviate the environmental impact. The project could be initiated and coordinated by MEF and submitted for evaluation to the Inter-ministerial Council for economic problems, fiscal and commercial policies, domestic market, competitiveness and business environment.

4) Establishment of public-private partnerships of research-development and innovation between the NRDI subordinated to MEF and the economic operators from the manufacturing industry, with the purpose to increase the competitiveness and eco-efficiency of the latter by:

- participation in joint projects of research-development and innovation through NPRDI and project implementation in the economic activity of the beneficiary economic operator;
- assistance in adopting the new technologies to efficientize and alleviate the ecological impact of the technological products and processes of the economic operators from the manufacturing industry.

5) special programs of assistance (in collaboration with the Ministry of Communications and Information Technology and with the Ministry for Small and Medium Enterprises, Trade, Tourism and Liberal Professions, based on the specific goals of the *Sectoral Operational Program for the Increase of the Economic Competitiveness, 2007-2013* for the commercial companies from the *medium-tech* and, particularly, *high-tech* branches.

6) exploit the opportunities provided by ETAP for the access to environmental technologies; correlation of this program with the industrial programs developed for the manufacturing industry. For instance, establishment of technological networks and platforms for technological transfer and research-development to meet the need for ecological technologies

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<sup>99</sup> By the end of 2006, the processing industry contributed with 81.1% to the total industrial production and with more than **99.1% to the total export of Romania**; its employees accounted for 86.3% of the average number of personnel employed in industry.

of the commercial societies operating in the branches of the manufacturing industry, by collaboration between MEF, MMDD and MedC.

7) stimulate the participation of the commercial companies from the manufacturing industry to RDI consortia through Program 4 of NPRDI 2007-2013, *Partnerships in priority areas* (whose goal is exactly to “increase RD competitiveness by stimulating partnerships in priority areas, materialized in technologies, innovative products and services which to solve complex problems and to create mechanisms of implementation”) and through Program 5 *Innovation* whose goal is to “increase the capacity of innovation, technological development and assimilation in production of the research results, with the view to improve the competitiveness of the national economy and to increase the quality of life.

The analyses conducted during the recent years concerning the competitiveness of the branches of the Romanian Economy, analyses which due to the constraints of availability of the statistic data, tend to be outdated when published within a dynamic economy undergoing a fast structural change (as it is that of Romania), it results that ***some sectors recorded increases of competitiveness higher than the average of the national economy***, which could be a possible criterion of allocation of resources through industrial policies towards these sectors, provided they would create positive horizontal effects or they would have a very large share of the value added during production. Included here are: the industry of the communications, radio and TV equipment, wood industry, rubber and plastics industry, food industry, oil products industry. These industries appear as temporary champions of the surveyed period (2003-2006), but it is not sure if they are competitive at EU level too, or if they are the most competitive branches of the Romanian industry. The only conclusion is that during the surveyed period, these industry branches recorded apparent rates of competitiveness growth higher than in other branches. They can not be considered a priority for a possible state intervention to allocate economic resources. In general, ***the priorities must be chosen according to the criterion of the beneficial effect on the business environment and on the socio-economic system, rather than by sectoral selection.***

We proposed in this paper to use the matrix approach at the decision-making level of the Romanian economy; this new approach (described at the end of chapter 3) was recently introduced by the European Commission to analyse and monitor the economies of the member states in terms of competitiveness and its factors.

Our recommendation is ***to use the matrix analysis in the future, especially to identify the critical areas of horizontal policy which influence the highest number of sectors of the Romanian industry, rather than to identify winning industries.***

To do this, ***periodical sectoral analyses*** are required, which to reveal the most important factors influencing the dynamics and competitiveness of the industrial sectors.

The initiatives corresponding to the framework policies: IPR; the initiatives for legislative simplification; standards assumed by the local policies; make a documented implementation plan for the impact of these measures on the Romanian industry and on its competitiveness.

Concomitantly, ***the most efficient modalities to participate in the initiatives of horizontal policy must be explored, such as R&I monitoring or Skills, industry and Services.*** These areas being the most problematic for Romania, this exploration should ***seek to obtain the highest synergy with the local initiatives.***

The quality of the environmental regulations influences, within the matrix framework, over 70% of the analyzed industrial sectors. Hence, ***in the field of the environment*** (initiatives *Competitiveness, Energy and Environment and Action Plan for Sustainable Industrial Policy*)

*a proper balance must be achieved between the duty to introduce these measures and the cost for each single sector.*

*The efforts of horizontal policy in Romania should focus on:*

- *Increasing the human capital;*
- *Stimulating research and development;*
- *Constructing the technological infrastructure;*
- *Stimulating the development of the infrastructure for services.*

These areas should receive priority allocations of public resources. The adopted policies should be channelled, on the medium-term, towards 2-3 priority areas regarded as performance drivers (the “Christmas tree” phenomenon should be avoided – directing resources in too many directions, which is typical to our strategies). For instance, such an area could be the improvement of access to and quality of the tertiary technical education. These areas should be the outcome of a set of fundamenting studies similar to the ones used to substantiate the EC political recommendations. The instruments of policy must be associated to goals quantifiable in clear deadlines (2-5 years). These instruments of policy must be monitored frequently (annually) to evaluate both their implementation and their performance.

*The improvement of the business environment and the strengthening of the competition policy are framework conditions for the success of any industrial policy, including of the policies in the priority areas described earlier.* The more competitive and dynamic are the markets, the faster they will react to the stimuli of industrial policy, they will send more efficient and stronger signals in the economic circuit (including in sectors such as education and research) and they will adapt easier to the challenges of the future. It is not a coincidence that in the EU, and not only, the low level of the state aid and of the regulation are positively correlated, with good results in terms of industrial policy and economic development in general.

One must not forget that any economic policy is financed from sources taken out of the economic circuit, and this may result in the reduction of the private investment (*crowding out* phenomenon), including in the areas where this is deficient. Even if the horizontal industrial policies are meant to correct market failures generated by the presence of positive externalities (such is the case of research-development, infrastructure), the economic analysis revealed that, in order to be efficient, they have to rely as much as possible on market instruments or on the stimulation of developing market instruments. For instance, many experiments have shown that the decentralization of education associated to the enforcement of performance standards whose nonobservance results in cutting of the public resources allocated to the public institutions or in increasing them in case of a higher performance, resulted, by the effect of competition created within the system, in the significant increase of the quality of the public education.

So far, the industrial policies in Romania have been elaborated within a parish system (at the level of the different public authorities), unsystematically and uncoordinated. Whatever the orientation of the horizontal industrial policy, an approach based on the market and on stimulating its creative potential (which we support), or a *top-down* bureaucratic approach (noticed as conjectural in the EU industrial policies), *an institutional framework must be established for the joint evaluation and development of all the proposals of industrial policy* and make periodical reviews of these policies. This can be done by a *unique organism for policy research*. Thus, the measures of industrial policy will be coordinated and prioritized

correctly at the national level, their synergies and complementarities will be identified and they will be coordinated with the community industrial policies. This organism will:

- Initiate and supervise the achievement of sectoral analyses and sectoral monitoring;
- Evaluate the EU forms of financing for different initiatives;
- Elaborate impact analyses on the effects of different policies;
- Impact analyses of the political measures and of the globalization, measures which generate structural changes, to anticipate them (like I/O tables);
- Construct the platform of dialogue between the different political decision-makers, between them and other actors.

Essentially, we propose *restructuring the way in which the National Plan of Development* is produced and the establishment (including by the transformation of the current system of socio-economic research in Romania) of a structure similar to the Irish *Economic and Social Research Institute*. To allow this organism perform its function and to avoid overlapping with the policies developed by different ministries and public authorities, this authority should function under the coordination of the Prime Minister and it should represent the authority responsible with the elaboration of the industrial policy of Romania at the horizontal and sectoral level.

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