

The Economic Contribution of Copyright-Based Industries in Romania



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Table of contents

Executive Summary	166
Introduction	171
Chapter 1. Legal and Institutional Framework	173
1.1 Legal Framework Before 1989	173
1.2 Legal Framework After 1989	174
1.3 Copyright Law Enforcement and Administrative Capacity	176
1.4 Collective Management Bodies	177
Chapter 2. Methodology	181
2.1 Information and Data Sources	181
2.2 Core Copyright Industries	183
2.3 Interdependent Copyright Industries	184
2.4 Partial Copyright Industries	186
2.5 Non-Dedicated Support Industries	188
2.6 Objectives	189
Chapter 3. Economic Contribution of the Copyright-Based Industries	190
3.1 General Economic Premises	190
3.2 Turnover - Total Output	190
3.3 Gross Value Added (GVA)	193
3.4 Labor Force and Employment	195
3.5 Total Wage Cost and Average Wage	198
3.6 Profitability of Copyright-Based Industries	199
3.7 International Trade	200
Chapter 4. Economic Contribution of the Core Copyright Industries	204
4.1 Evolution of the Number of Firms and Their Profitability	204
4.2 Structure, Volume and Evolution of the Gross Value Added (GVA)	208
4.3 Employment in Core Copyright Industries	210
4.4 Total and Average Wage	212
4.5 Gross Value Added Economic Components	213
4.6 Productivity and Profitability of Core Copyright Industries	214
4.7 Contribution of Core Copyright Industries to International Trade	217
4.8 Tax Contributions of Core Copyright Industries	220
Chapter 5. Economic Contribution of Non-Core Copyright Industries	222
5.1 Economic Contribution of Interdependent Copyright Industries	222
5.1.1 <i>Gross Value Added</i>	222
5.1.2 <i>Employment</i>	224
5.1.3 <i>International Trade</i>	225
5.2 Economic Contribution of Partial Copyright Industries	226
5.2.1 <i>Gross Value Added</i>	227
5.2.2 <i>Employment</i>	229

5.3	Economic Contribution of Non-Dedicated Support Copyright Industries	230
5.3.1	<i>Gross Value Added</i>	230
5.3.2	Employment	231
Chapter 6.	International Comparisons	233
6.1	Contribution of Total Copyright-Based Industries and Core Copyright Industries to GDP	233
6.2	Contribution of the Core Copyright Industries to Employment	234
6.3	Growth Rate of Total CIs and Core Copyright Industry Indicators	235
6.4	Productivity and Other Performance Indicators	236
6.5	Investment in Knowledge and Creativity	239
Chapter 7.	Conclusions and Recommendations	241
7.1	Conclusions	241
7.2	Recommendations	243
Annexes		245
References		248

Executive Summary

Copyright-based industries (CIs) are a multidimensional sector which creates wealth and value in economic terms and contributes to social cohesion, self-confidence and better education in a globalized and multicultural world.

The economic dimension of the CI sector in Romania is worthy of closer interest for policymakers, given its increasing contribution to gross domestic product (GDP), employment, foreign trade and investment. No assessment of the CI economy in Romania has ever been made before, and such a task is both an attractive challenge and a heavy responsibility, not only for the authors of this study but also for a large number of stakeholders.

The economic contribution of CIs is becoming better understood thanks to an increasing demand for and consumption of creative-cultural goods and services and to the impact of education, which calls for greater quantities of cultural products and copyright works.

In spite of the wide variety of CI models of creation, production, distribution and use, we can find certain common features; these include the relatively short economic life of creations, cultural goods and services owing to rapid changes in technology, scientific behavior and fashion; a high risk of failure; strong international competition; market volatility; CIs' important role in communication and education; mass production and consumption; digitalization of production processes; and the interdependence of CIs and other economic sectors, to which they afford elements of creativity and innovation.

This study is the first piece of research carried out in Romania using WIPO standards, which make for more reliable inter-country data comparisons on the economic contribution of CIs.

The contribution of copyright industries to Romania's economy is analyzed mainly with the help of three relevant economic indicators, namely GDP (value added), employment and the value of exports and imports.

CIs' Contribution to Value Added/GDP

As Table 1 shows, the overall economic contribution of CIs represented 5.55 per cent of Romania's total GDP in 2005 as compared with 3.75 per cent in 2002.

Table 1. Share of CIs in GDP, 2002-2005 (%)

	2002	2003	2004	2005
Total CIs, of which:	3.75	5.34	4.59	5.55
Core	2.06	3.23	3.33	3.55
Interdependent	0.96	1.09	0.37	1.08
Partial	0.45	0.66	0.53	0.53
Non-Dedicated	0.28	0.36	0.36	0.39

Source: Calculation based on Ministry of Public Finance data

The core copyright industries made the most significant contribution to GDP, followed by the interdependent industries. The substantial increase in the CI share of GDP between 2002 and 2005 is explained by a high rate of growth in the sector, the decline in 2004 being due mainly to the influence of elections, which reduced partial and interdependent activities in favor of others devoted to political objectives. The volatility of non-core activity was more sensitive to "election fever".

The highest proportion of gross value added attributable to CI is that of the core industries (over 60 per cent from 2003 to 2005).

The real annual growth rate for the copyright industries collectively from 2002 to 2005 was 26.78 per cent, of which: 33.49 per cent was core, 15.57 per cent interdependent, 17.17 per cent partial and 24.21 per cent non-dedicated; the growth in CIs for that period exceeded real growth in the economy as a whole.

Labor Force and Employment

Copyright industries are an important area of activity in terms of the level of employment and the creation of full-time and part-time jobs, and the average qualifications of employees are higher in that area than those at the national level.

Table 2. Average Number of Employees in CIs and Their Components in Romania, 2002-2005

	2002	2003	2004	2005
Core	44.019	76.115	89.613	101.801
Interdependent	17.733	17.203	14.683	24.864
Partial	30.044	37.738	36.701	32.257
Non-Dedicated	11.821	15.524	16.800	18.528
Total Copyright	103.617	147.045	156.521	180.450
Total National	3,800.031	4,091.236	4,138.986	4,318.742

Source: Calculation based on Ministry of Finance primary data

Employment in CIs more than doubled from 2002 to 2005 as a result of lasting macro stability, the resumption of economic growth and relatively low employee numbers at the beginning of the period. Wage increases in some components of CIs (such as ITC, printing, television, etc.) were another factor. CIs employed 180,450 workers in 2005, or 2.36 per cent of Romania's total working population (see Table 2), thereby exceeding the figures for mining and quarrying (117,000), gas and water (135,000), hotels and restaurants (133,000) and public administration and defense (159,000).

The highest number of CI employees was found in the core industries and the lowest in the non-dedicated support industries.

The number of employees grew 1.5 times faster than the national average, or 2.6 times faster for core industries, 1.24 for interdependent and 1.4 for non-dedicated.

Table 3. Labor Productivity* for Total CIs, CI Components and the National Economy ('000 euro/employee)

	Years			
	2002	2003	2004	2005
Total CIs, of which:	7,370	7,842	7,750	10,458
Core	9,514	9,155	9,823	11,869
Interdependent	11,023	13,696	6,696	14,716
Partial	3,056	3,789	3,798	5,080
Non-Dedicated	4,872	4,863	6,119	7,224
Total National Economy	5,357	5,275	6,386	7,887

* Value added per employee.

Source: Calculation based on Ministry of Finance data

The productivity level for total CIs, core and interdependent, was higher than the national average for the entire period. For instance, total CI labor productivity was 32.5 per cent above the national level.

The core and interdependent sectors reached even higher levels, namely 50.5 per cent and 86.6 per cent respectively. The superior labor productivity figures for CIs highlight their significant growth potential in terms of competitiveness and efficiency on both domestic and international markets. For the whole period analyzed, the average annual growth rate in labor productivity was above the national average. The gross operational profit per employee in CIs recorded high and increasing values in total CIs, core, interdependent and non-dedicated, for the entire period (see Table 4).

Table 4. Ratio of Profit per Employee for CIs to Profit per Employee at the National Level (%)

	Years			
	2002	2003	2004	2005
Total CIs, of which:	139	185	145	153
Core	230	213	195	179
Interdependent	79	378	108	227
Partial	54	66	50	48
Non-Dedicated	102	122	118	111

Source: Ministry of Finance primary data

International Trade - Exports

From 2002 to 2005, the FOB (free on board) value of exports for CIs increased from 122.7 million to 177.1 million euros (1.44 per cent), while the share in total exports was 0.84 per cent in 2002 and 0.80 per cent in 2005. This share was relatively low, but still little different from that of some important commodities specific to the Romanian export trade.

Table 5. CI Exports, 2002-2005 ('000'000 euros)

CI Components	Years			
	2002	2003	2004	2005
Total CI Exports, of which:	122.7	147.1	152.3	177.1
Core	23.5	43.9	36.8	52.6
Interdependent	57.3	59.9	69.3	73.1
Partial	41.9	43.3	46.2	51.4
Total National Exports	14,675	15,614	18,935	22,255

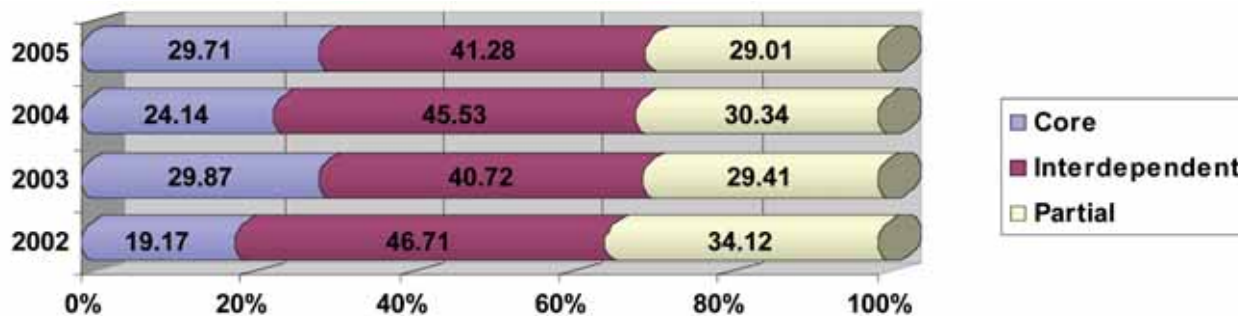
Source: National Institute for Statistics (NIS) database

In the period analyzed CIs followed an upward trend. They did however show annual fluctuations, which confirmed not only annual production variations due to internal factors and international circumstances, but also an inability to maintain Romanian exports at a constant level. These fluctuations are further explained by the influence of the "fashion" factor, implying a given creativity and an adjustment and absorption capacity possessed by the Romanian economy, which in our case is reflected in the modest power of Romanian companies to impose their own brands on domestic and external markets.

The average annual rate of growth in the exports of CIs from 2002 to 2005 was 13 per cent: the core industries recorded a value of 30.78 per cent, the interdependent industries 8.45 per cent and the partial industries 7.06 per cent; Core industry exports substantially exceeded the national average.

The average annual rate of growth in the exports of CIs was almost 2 per cent lower than the national average, i.e. 13.01 per cent compared with 14.89 per cent for the entire period, which leads us to the conclusion that the share of CI exports in the national total showed a downward trend.

Graph 1. Structure of Exports by CI Components, 2002-2005

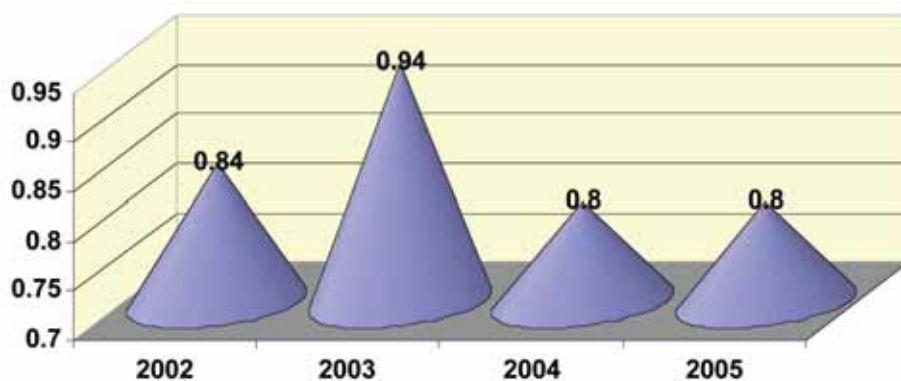


Source: NIS database

For the period analyzed, an increase will be noted in the core industries' share in the total exports of CIs, at 10.54 per cent, and a decrease in that of the non-core industries, which reveals the potential of the core industries for increasing their contribution to total national exports.

The share of the exports of copyright goods in total national exports ranged from 0.80 per cent to 0.90 per cent, which is modest compared with other countries, particularly the industrialized ones.

Graph 2. Share of CI Exports in Total Exports, 2002-2005 (%)



Source: NIS database

Imports

Imports of copyright-protected goods, as well as goods from related support industries, play a very important part in the specific activities of CIs. The volume, growth rate and structure of those imports have been analyzed using the same statistical and dynamic indicators as for exports.

Table 6. Volume of CI Imports ('000'000 euros)

CI Components	Years			
	2002	2003	2004	2005
Total CIs	205.9	263.9	330.5	424.9
Core	76.5	101.6	137.8	177.3
Interdependent	86.8	117.0	140.1	184.1
Partial	42.5	45.2	52.5	63.4
Total National Imports	18,881	21,201	26,281	32,568

Source: NIS database

CI imports doubled between 2002 and 2005. The highest increases were recorded by the core industries (over 130 per cent) and interdependent industries (over 110 per cent), both higher than the growth rate for national imports (70 per cent).

It is worth mentioning that CI imports showed a constant upward trend for all categories of products. Compared with exports, CI imports were more dynamic and showed steady growth, which is explained by the liberalization of Romania's international trade, the elimination of the State monopoly and the growing economic and social contribution of creative cultural imports.

Annual average growth rates for CI imports were: total CIs 27.3 per cent, core industries 32.33 per cent, interdependent industries 28.46 per cent and partial industries 14.20 per cent. Given that the average annual growth rate for Romanian imports as a whole was 19.93 per cent, CI imports significantly exceeded the national total.

As the imports of CIs grew faster than their exports, the differential between the two indicators rose from 1.6 in 2002 to 2.4 in 2005, which in turn led to a worsening of the CI-related trade balance deficit from 83.2 million to 247.7 million euros (Table 3.12). In other words, in the medium and the long term, CIs contributed to an increased deficit in the Romanian current account and foreign debt.

Table 7. CI Trade Balance ('000'000 euros)

	2002	2003	2004	2005
Core	-53,010	-57,731	-101,119	-124,719
Interdependent	-29,540	-57,171	-70,812	-111,022
Partial	-0,706	-1,936	-6,306	-12,043
Total Copyright	-83,256	-116,838	-178,237	-247,784

Source: NIS database

The share of total CI imports in the total import figure for Romania rose from 1.09 per cent in 2002 to 1.30 per cent in 2005. The greatest contributions to this result were made by the core industries (0.54 per cent) and the interdependent industries (0.57 per cent).

Romania is highly dependent on the import of CI goods, the volume of which is close to that of other important industries. The improvement in the trade balance involved State participation in promoting exports of copyright products to reduce the gap between the import and export of copyright works and related activities.

Introduction

Copyright-based industries (CIs) perform industrial activities that depend on intellectual property rights (IPRs) in general and copyright in particular.

From an economic viewpoint, copyright-based activities generate value added and income, create jobs and contribute to foreign trade.

The direct and indirect economic effects of CIs are felt, not only in production (value added), but also in consumption and distribution, by a large number of major and ancillary activities within the economy and in society.

The contribution of CI-related activities to gross domestic product or foreign trade in developed countries is quite significant, in certain cases exceeding that of the transport or construction sectors. Another characteristic of these activities is their growth rate over the past decade, which has been higher than the average growth rate of the national economy.

Research into the macroeconomic contribution of CIs in Romania is a novel scientific exercise for our country and pursues the following objectives:

- to express in quantitative and qualitative terms the contribution of CIs to GDP, employment and foreign trade in Romania;
- to analyze the main factors influencing the volume, growth rates, structure, productivity and profitability of the industries;
- to identify certain characteristics as elements for substantiating measures, programs and decisions in this field in the short, the medium and the long term;
- to make proposals for improvements to the statistical information systems of CIs, including data gathering and processing according to the methodological findings of the World Intellectual Property Organization (WIPO), and on the basis of the favorable experiences of other countries.

Our study reflects pioneering research in Romania. It has faced a series of challenges and difficulties inherent in a new area of research on the circumstances of transition to a market economy and preparations for accession to the European Union (EU), and others due to the demands of globalization and sustainable development.

The difficulties encountered have been, in order of magnitude: a lack of adequate statistical and economic data and other information needed to carry out the objectives of the study in a satisfactory manner; the very heavy workload represented by the collection and processing of data according to WIPO classification methods, and the lack of certain reference works in the technical literature of our country.

Understanding the economic contribution of CIs has caused us to take into consideration, directly or indirectly, many cultural, economic, legal, technological, social, political and environmental determinants at the national and the international level. Considered one of a number of contemporary types of “growth engines” CIs require a special effort to be made to distinguish their direct and indirect effects in quantitative and qualitative terms.

The present study was initiated by WIPO in partnership with the Romanian Intellectual Property Organization (RIPO), the Ministry of Culture and Religious Affairs (MOCRA) and The Center for Research on Culture

(under the auspices of MOCRA). The research team was coordinated by Liviu Chelcea, Director of the Center for Research on Culture, and Delia Mucică, who was Secretary General of the Ministry of Culture and Religious Affairs at the start of the research. The research team consisted of members of the above institutions plus two researchers from the Institute of National Economy (under the auspices of the Romanian Academy).

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Chapter 1 Legal and Institutional Framework

1.1. Legal Framework Before 1989

Viewed several hundred years ago as an insignificant legal concept, copyright has since become a fundamental right for a large area of the world, including Romania. Up to the second half of the 19th century copyright followed some very interesting paths as it evolved in our country. The importance accorded to intellectual property (IP) within the three Romanian countries was seldom recorded in the documents of the time.

On April 1, 1862, during the reign of Alexandru Ioan Cuza, immediately after the Moldavian and Wallachian principalities were merged into a single Romanian State, the Press Law was adopted. It introduced certain copyright rules relating to artistic and literary creations, which had previously been deeply rooted in French legislation dating from 1793. The Romanian Law has been amended several times, and from 1904 onwards has provided for an exclusive right of reproduction and sale (distribution), and also the right to assign a work, with sanctions and other remedies in cases of infringement of those rights (use of the work without the author's permission). Protection of rights was granted to the authors during their lifetime and to their descendants for a period of ten years thereafter.

At the beginning of the 20th century copyright entered into a new era, with several important events taking place in Romania. One such event, of European significance and with a major impact on Romanian copyright legislation, was the 29th Congress of the International Literary and Artistic Association, which took place in 1906. This event brought together important personalities in the fields of copyright and artistic or literary creation from Europe and Romania, including Henri Morel, the Director of BIRPI (which eventually became WIPO) in Berne, Switzerland, Camille Flammarion, Auguste Rodin, R. Strauss, H. Sudermann, Jules Lhermina, George Maillard, Albert Osterrieth, Charles Bartaumiens, P. Castori, Cav. Penso, Auguste Bernaert, George Enescu, C. Dissescu, Constantin Hamangiu and Barbu Ștefănescu Delavrancea.

On June, 25 1923, the Romanian Parliament voted Law No 126/1923 on Literary and Artistic Property (Of. Monitor No 68/28.06.1923), which was the first modern copyright law in Romania. One of its important provisions granted protection not only to nationals of Romania, but also to foreign authors, and without a reciprocity clause. Authors enjoyed a lifetime exclusive right to authorize the reproduction, translation and adaptation of their works, as well as the publishing and performance thereof. They could also exploit or sell their works or dispose of them by affidavit or donation. Legal heirs were granted the same rights for 30 years after the author's death.

After the Second World War Law No 126/1923 was amended by the following enactments: Decree No 596/1946 on Publishing Agreements and the Copyright in Literary Works; Decree No 17/1949 on Book Publishing and Distribution; Decree No 19/1951 on Works Susceptible of Being Printable; Decrees Nos 428/1952 and 591/1955 Governing Contracts on, and the Acquisition and Exploitation of, Art Works and Museum Exhibits.

Once the Communist regime was in power, Decree No 321/1956 on Copyright (Of. B. No 18/27.06.1956) became the basic statute governing the field in Romania, and remained so for 50 years, until 1996.

1.2 Legal Framework After 1989

With the end of Communism in 1989 Romania started its return to the status of a European country, and the various tasks involved in the reconstruction of civil society included the design of an appropriate framework for a copyright law and its effective enforcement.

So Law No 8/1996, on Copyright and Related Rights (Of. M. No 60/26.03.1996), entered into force on June 25, 1996. This provided the foundation on which, through subsequent amendments and additions in succeeding years, a modern, comprehensive and more effective law, fully compliant with the *acquis communautaire* in the field of copyright was constructed.

Of the later modifications to this framework to bring it fully into conformity with EU legislation (a precondition of Romania's entry into the EU), we would mention the following: Law No 285/2004 (Of.M.No 587/30.06.2004, in force from July 30, 2004); E.O.G No 123/2005 (Of.M.No 843/19.09.2005), and Law No.329/2006 Approving, with Amendments, E.O.G. No 123/2005 (Of.M.No 657/31.07.2006, in force from August 3, 2006).

With a view to better regulation within the copyright system and a better coverage of all aspects of this very active field, the main legal provisions enshrined in Law 8/1996 and its later amendments were complemented by the following secondary legislation: Government Decision No 974/2001 approving the cooperation program between the Romanian Government and WIPO (Of. M. No 656/18.10.2001, in force as of the date of publication); Government Decision No 1424/2003 approving a national strategy for copyright between 2003 and 2007 (Of.M. No 905/18.12.2003), amended and completed by Government Decision No 1174./2005 amending and completing the Annex to Government Decision No 1424/2003 on the implementation of the action plan for a national strategy in the field of copyright (Of. M. No 927/18.10.2005); Government Decision No 1095/2000 approving the methodological standards governing the disposal and destruction of pirate media, materials, phonograms, holographic marks or covers confiscated under the law (Of. M. No 608/27.11.2000); Government Emergency Ordinance No 190/2005 on the measures necessary for EU integration (Of.M. No 1179/28.12.2005); Government Ordinance No 25/2006 increasing the administrative capacity of the Romanian Office for Copyright (Of. M. No 84/30.01.2006, in force from March 1, 2006), and Government Decision No 401/2006 on the organization, operation, assets and organization chart of the Romanian Office for Copyright (Of. M. No 292/31.03.2006). At the same time it must be emphasized that the Basic Law, Romania's Constitution, as revised after the restoration of democracy, includes provisions relating to intellectual property: free expression is guaranteed and protected (Art. 30), as are the right to information (Art. 31), access to culture (Art. 33) and the right to private property .

At the international level, Romania has ratified numerous treaties, agreements and conventions relevant to copyright. We start with 1926 when, on March 24, by Law No 152, Romania joined the *Berne Convention for the Protection of Literary and Artistic Works*, as revised by the Berlin Act of November 13, 1908, which came into force for Romania on January 1, 1927. Romania has also ratified some of the later Acts of the Berne Convention, namely the Stockholm Act of July 14, 1967, by Decree No 1175/1968 (Of. B. No 01/06.01.1969) and the Paris Act of July 24, 1971, by Law No 77/1998 (Of. M. No 156/17.04.1998).

Another very important convention in this field is the *International Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations* (Rome Convention) of October 26, 1961, to which Romania became party by Law No 76/1998 (Of. M. No 148/14.04.1998).

Moreover, faced with the exponential development of digital technology, viewed as a new way of exploiting copyright-protected creations, WIPO and the member States of the Berne Union were mindful of the need to create new international, legally binding instruments that would adequately protect intellectual creations, including works, products or other subject matter of copyright or related rights.

On December 20, 1996, in Geneva, two international treaties, known as the "Internet Treaties", the *WIPO Copyright Treaty (WCT)* and the *WIPO Performances and Phonograms Treaty (WPPT)*, were signed; they came into force on February 6 and May 20, 2002, respectively.

Romania signed both treaties in December 1997 and the Romanian Parliament ratified them on February 1, 2001, the WCT by Law 205/2000 and the WPPT by Law 206/2000 (both in Of. M. No 609/27.11.2000). Also at the international level, it should be mentioned that Romania became a founder member of the World Trade Organization (WTO) by its signature of the Marrakesh Agreement on April 15, 1994, which the Romanian Parliament ratified by Law No 133/1994 (Of. M. No 360/27.12.1994).

Annex IC of this Agreement is relevant to copyright: it is called the Agreement on Trade-Related Aspects of Intellectual Property Rights (or TRIPS Agreement), and it entered into force on January 1, 1995. It provides flexible periods for the mandatory application of the Agreement by signatory States, with one year as the general rule, five years for developing countries and countries in transition to market economy (like Romania) and ten years for the least developed countries (LDCs), with the exception of TRIPS Articles 3, 4 and 5, which apply to all signatory States. The remaining TRIPS provisions became mandatory for Romania on January 1, 2000.

At present Romania's copyright and related rights legislation is fully harmonized with that of the EU, in compliance with the provisions of all eight Directives of the European Council and Parliament.

Specifically, Law No 8/1996 incorporated the provisions of the following European Directives in national legislation: 91/250/EEC of May 14, 1991, on the Legal Protection of Computer Programs; 92/100/EEC of November 19, 1992, on Rental and Lending Rights and on Certain Rights Related to Copyright in the Field of Intellectual Property; 93/83/EEC of September 27, 1993, on the Coordination of Certain Rules Concerning Copyright and Related Rights Applicable to Satellite Broadcasting and Cable Retransmission; 93/98/EEC of October 29, 1993, Regarding the Harmonization of the Term of Protection of Copyright and Certain Related Rights, and 96/9/EC, dated March 11, 1996, on the Legal Protection of Databases.

Law No 285/2004 incorporated the provisions of Directive 2001/29/EC of May 22, 2001, on the Harmonization of Certain Aspects of Copyright and Related Rights in the Information Society.

Finally, Government Emergency Ordinance No 123/2005, approved by Law No 329/2006, incorporated in national legislation the provisions of the last two Directives in the copyright field, 2001/84/EC of September 27, 2001, on the Resale Rights of the Author of an Original Work of Art and 2004/48/EC of April 29, 2004, on the Enforcement of IPRs (intellectual property rights).

1.3 Copyright Law Enforcement and Administrative Capacity

The field of copyright attracts much attention in Romania, a fact highlighted by the existence of an action plan set in place by Government Decision No 1174/2005. Its strategic objectives include the enhancement of the administrative capacity of the Romanian Intellectual Property Organization (RIPO) and the achievement of effective cooperation between State institutions with prerogatives in copyright enforcement, coordinated by the Public Prosecution Service.

Thus it was that on June 26, 2006, the Multilateral Protocol for the Constitution of the Copyright Working Group was signed by its 32 members and settled. The members on the one hand represented those authorities whose prerogatives related to copyright enforcement, namely the Inspectorate General of Police, the Inspectorate General of Border Police, the National Customs Authority, the General Prosecutor's Office, the Ministry of Justice, the Financial Guard, the Office for Copyright and the Patent and Trademark Office (OSIM), and on the other were representatives of copyright owners (collective management bodies), including anti-piracy organizations in the musical, audiovisual or software fields, the Phonogram Producers Union of Romania (IFPI Romania,) the Romanian Organization Against Copyright Theft (RO-ACT), the Business Software Alliance, Electronic Arts and Vivendi Universal Games. The Working Group is made up of three subgroups, each with precise functions such as anti-piracy and anti-counterfeiting, and also collective management bodies for copyright and related rights.

The leading authority in the copyright and related rights field is the Romanian Office for Copyright (ORDA), established when Law 8/1996 entered into force as a specialist Government body with a judicial function, being the only national authority currently charged with supervising, authorizing, arbitrating and exercising technical and scientific functions in the copyright and related rights field under the coordination of Ministry of Culture and Religious Affairs.

ORDA is actively involved in the consolidation and development of Romania's IP system, its aim being to provide a stimulating cultural and economic system for genuine creations, fully capable of guaranteeing protection and turning results to account.

ORDA is also permanently concerned with improving national copyright legislation, harmonizing it and bringing it up to date in line with European and international judicial enactments. Apart from that it is making significant efforts towards better law enforcement through the intensification and extension of measures for national evidence, warning and examination, and by increasing awareness regarding the use of and respect for copyright and related rights. The latter is mainly achieved through training for the business sector, copyright owners, users and public authorities and through public information campaigns. By promoting values and principles such as transparency and dynamism, creativity and innovation and respecting and improving traditions, and also through responsibility and professionalism, ORDA is contributing to the consolidation of civil society, and at the same time it is bringing increased public awareness of the importance of effective protection for copyright owners and other stakeholders by providing a model for the observance of copyright and related rights legislation.

By constantly developing and consolidating its management capacity, ORDA has perfected a system of control of the legality of copyrightable products circulating in Romania, and lowered the incidence of piracy in fields such as music, audiovisual material, software and the like.

Government Decision No 401/2006 sets the maximum number of posts at ORDA at 92, most of them assigned to the Expertise and Findings Department. High staff numbers are necessary for the provision of expertise and technical-scientific findings in connection with the work of the city, State and financial police.

To that end 1,030 examinations were conducted in 2006 on 199,554 copyright-eligible products (131,530 CDs and DVDs, 6,457 audiocassettes, 703 VHS cassettes, 304 hard disks, 60,148 covers and 412 other items). In the same year, of a total of 152 cases investigated by the Office of the Prosecutor General that resulted in prosecution, 117 were based on ORDA examinations and concerned copyright and related rights infringements.

ORDA personnel spent 256 days on technical-scientific activities and on supporting supervision and control work in localities outside Bucharest, in the course of which they carried out specific activities covering practically all the "hot" zones for pirated products on Romanian territory.

In 2006, according to the National Register of Phonograms, 13,321,671 holographic stickers were issued and 14,808 titles registered. The National Register of Video Recordings showed 3,581,575 holographic stickers issued for 1,719 titles registered, and the National Register of Software Programs contained 5,401 software programs.

On five occasions starting in 2001, in order to alert the general public to the enforcement of copyright and related rights and to discourage possible violations, ORDA organized the public destruction of pirated material, destroying a total of 550,000 objects.

1.4 Collective Management Bodies

Collective management bodies are private legal entities, established by the free association of the owners of copyright and related rights, their main activity being the collection and distribution of any payments whose administration has been entrusted to them by those owners. They operate according to the regulations regarding non-governmental associations (OG 26/2000), as amended, and the special provisions of Law 8/1996 on Copyright and Related Rights.

These bodies have been directly created by copyright owners; they administer the rights of different categories of copyright owners from different creative fields, and their activity is overseen by ORDA. Collective management bodies are obliged to devise methodologies for their fields of activity, including the setting of tariffs, which have first to be negotiated with the users, to pay for the rights in works whose exploitation individual copyright owners cannot authorize themselves.

They also authorize users in exchange for remuneration, issuing a non-exclusive, official license; acting in the copyright owner's name, they enter into general contracts with the users, the main purpose of the contracts being the licensing of the use of the protected repertoire.

One important role of collective management bodies is the protection of their members' interests outside Romania under representation contracts entered into with foreign counterparts.

Their main task however is the collection and distribution of payments owed to copyright owners.

To do that they need to maintain contact with the users or their intermediaries, communicating information and forwarding any documentation necessary for the remuneration to be worked out correctly, and processing any information regarding actual use of the works, with the name of the copyright owner mentioned, so that the remuneration may be allocated.

At the same time, collective management bodies are obliged to assure their members of access to information on any aspect of the payments due as a result of their collection activities; they offer specialized

assistance to copyright owners and represent them in legal procedures. In the course of their activities they ensure the transparency of their collective administration work in dealings with public authorities with supervisory prerogatives, and engage in any other activity consistent with the special mandate given them by the owners of copyright and related rights.

Eight collective management bodies are operating in Romania at present, their main function being to administer different kinds of rights - copyright and related rights - collect any sums payable and distribute them to their members.

Four bodies operate within the copyright category: COPYRO administers the copyright in written works; the Society of Romanian Audiovisual Writers (DACIN SARA) the rights in cinematographic and audiovisual works; the Musicologists and Composers Union of Romania (UCMR-ADA) the rights in musical works and the Society for Collective Copyright Management in the Visual Arts Field (VISARTA) the rights in visual art works.

Four other collective management bodies operate in the field of related rights: the Romanian Phonogram Producers Union (UPFR) administers the rights of major phonogram producers and the Association for the Phonogram Producers of Romania (ADPFR) handles the rights of small Romanian phonogram producers, while the Romanian Center for Performers Rights Administration (CREDIDAM) takes care of performers and UPFAR-ARGOA administers the rights of the producers of audiovisual and cinematographic works.

COPYRO was approved as a copyright collective management body for written works, entitled Literary Fund by RIPO Director General Decision No 8/1997; it has been a member of the International Federation for Reprographic Rights Organizations (IFRRO) since 1998 and had observer status in the International Confederation of Societies of Authors and Composers (CISAC) since 1999. It collects the remuneration payable to authors for their written works; it is also the sole collector of remuneration for private copying (A4 sheets) in the graphic field, and of that payable to rights holders for private copying on physical media or devices. In addition, COPYRO collects its members' royalties for television and radio broadcasting, cable retransmission, stage performance and private copying. At the end of 2006 this body had 1,553 registered members and had entered into reciprocity contracts with counterparts in France, Greece, Russia and Spain.

DACIN SARA has been authorized to represent the rights of cinematographers and authors of other audiovisual works. It was established by RIPO Decision No 1/24.03.1997 and is a member of the International Collective Management Association of Audiovisual Works (AGICOA) and the International Association of Audiovisual Writers and Directors (AIDAA). It collects the remuneration due for public broadcasting, cable retransmission and private copying in the audiovisual field. At the end of 2006 DACIN SARA had 185 registered members and had entered into reciprocity contracts with 12 similar collective management bodies in countries such as Belgium, Germany, Italy, the Netherlands, Poland, Portugal, Slovenia, Switzerland and the United Kingdom.

UCMR-ADA is the body that administers the rights of authors and composers of musical works. It was approved as a collective management body by RIPO Decision No 3/24.03.1997; it is a member of CISAC and BIEM (*Bureau international des sociétés gérant les droits d'enregistrement et de reproduction mécanique*), the international organisation representing mechanical rights societies, it collects remuneration for all musical works performed in public theaters, by touring companies, in broadcasting and in cable retransmission, as well as for private copying in the sound and audiovisual field, for the reproduction of musical works on phonograms and video recordings and for their use as telephone ringtones and on the

Internet. At the end of 2002, it had 4,975 registered members and had entered into reciprocity contracts with 50 similar collective management bodies in many countries, namely Albania, Argentina, Armenia, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, Chile, China, Croatia, Cuba, the Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Israel, Italy, Japan, Latvia, Lithuania, Mexico, Moldova, the Netherlands, Norway, Portugal, Serbia, Slovakia, Spain, Sweden, Switzerland, The Former Yugoslav Republic of Macedonia, Turkey, Ukraine, the United Kingdom, the United States of America, Uruguay and Venezuela.

VISARTA is another Romanian collective management body that collects copyright royalties, and it is authorized to do so by virtue of ORDA Decision No 8/01.06.1999. It also has CISAC and IFRRO observer status, and collects remuneration for cable retransmission, reproduction and resale rights, as well as compensatory remuneration for private copying in the field of graphics. At the end of 2006 VISARTA had 168 registered members and had entered into reciprocity contracts with 20 similar collective management bodies in Australia, Austria, Canada, Chile, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Latvia, Lithuania, Mexico, Norway, Peru, Portugal, Spain and the United Kingdom.

As previously mentioned, there are at present four collective management bodies for related rights in Romania.

UPFR was authorized as a collective management body for the producers of phonograms by ORDA Decision No 5/24.03.1997; it is a member of the International Federation of the Phonographic Industry (IFPI). At the end of 2006 UPFR had 34 registered members in Romania. It collects remuneration for the radio and television broadcasting of phonograms for commercial purposes, communication to the public and cable retransmission, and also for private copying in the sound and audiovisual fields.

CREDIDAM was authorized as a collective management body for the related rights of performers by ORDA Decision No 4/24.03.1997. It is a member of AEPO-ARTIS, SCAPR and IPDA (IPD II). Its main role is to collect remuneration for the broadcasting on radio and television for commercial purposes of performances fixed on phonograms, for cable retransmission and for private copying in the musical and audiovisual fields, for public (theater) performance and for communication to the public. At the end of 2006 CREDIDAM had 5,756 registered members and had entered into reciprocity contracts with 30 similar collective management bodies in Austria, Belgium, Bulgaria, Canada, Croatia, the Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, the Netherlands, Poland, Russia, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

UPFAR-ARGOA was authorized as a collective management body for audiovisual and cinematographic producers by ORDA Decision No 9/13.08.1999, and is an AGICOA member. At present it collects the remuneration payable to its members for communication to the public (as background and for profit), broadcasting, cable retransmission and private copying in the audiovisual field. UPFAR-ARGOA had 54 registered members at the end of 2006 and reciprocity contracts with five similar collective management bodies in Belgium, Germany, Spain, Sweden and Switzerland.

The final collective management body, established in 2006 by RIPO Decision No 206/30.06.2006, is ADPFR, which manages the related rights of small producers of phonograms and has seven founder members. It should be stressed that the evolution of collective management bodies in Romania is linked to increased awareness and acknowledgement, on the part of copyright owners, of the importance both of their works and of a profitable copyright management climate. It also has a great deal to do with users' perception of the legal capital inherent in copyright creations. In most cases the consumers of CI products have not been

conscious of their close relation to copyright.

The significant level of up-to-date copyright protection in Romania, especially since the entry into force of the 1996 Copyright Law, has brought about real changes in the form of new business models, in both quantitative and qualitative terms. The considerable progress of creative industries is best illustrated by the levels of publishing activity (from just one State publishing house to more than a thousand), broadcasting activity (from one public radio and television station to several hundred) and phonogram production (from a single State phonogram producer to several hundred), and also by the growth in communication and information technology (from a few enterprises to hundreds of small and medium-sized enterprises (SMEs), some of them boasting an international reputation, especially in software production), not to mention the entertainment industry, which actively targets a variety of areas.

Chapter 2

Methodology

Determining the economic contribution of CIs has become an area of interest, especially from the theoretical-methodological and practical viewpoints, owing to their increasing role in production, distribution and consumption, in adjusting the business environment to various priorities and socio-economic requirements and in substantiating certain micro and/or macroeconomic decisions in investment, foreign trade, technology transfer and institutional-legal provisions governing IPRs.

It is a well-known fact that post-industrial society is characterized by the emergence and development of the "new economy" or knowledge-based economy, its driving force being factors such as intangible assets based on information technology (IT) and telecommunications (ICT). It is acknowledged that ICT has on the whole revolutionized the economy and society, especially those aspects that have to do with IP protection and remuneration, as copyright goods and services form a substantial part of e-commerce.

The CI concept, as explained in the WIPO Guide (*WIPO Guide on Surveying the Economic Contribution of Copyright-Based Industries, 2003*), is constituted by groups of activities with a certain dimension and structure "which can be statistically identified and measured", including the following categories:

- (a) Core copyright industries (the "nucleus" of the CI);
- (b) Interdependent copyright industries;
- (c) Partial copyright industries;
- (d) Non-dedicated support industries.

The specialized literature makes use of additional categories, in parallel with the CI concept, that are more or less related, or have a higher or lower degree of overlap or demarcation, such as "cultural industries" or "creative industries" (Caves R.E., 2000). Cultural industries are regarded as an auxiliary sector of the creative industry and include tourism and cultural heritage, museums, libraries, sports and a wide range of other cultural events at the local, national and international levels. At the same time they focus on supplying certain social and cultural values, and not necessarily those measurable in monetary terms.

Creative industries are a key element of the knowledge-based economy, which in the future will foment more initiatives aiming to make use of the cultural heritage to develop tourism, people's ideas and imagination as assets of increasing importance (Towse R., 2002).

CIs are characterized by the fact that once copyright goods have been produced, the process of their reproduction and distribution involves much lower costs, especially for those in digital form. Supplying the market with a creative work at a relatively low marginal cost for reproduction and distribution will not at first generate the income required for recovering total production costs.

2.1 Information and Data Sources

The statistical information for measuring the economic contribution of CI goods and services has been taken from the following sources:

- statistical data from the Romanian Chamber of Commerce and Industry regarding numbers of companies; profits and turnover for the 2002-2005 period at current prices;

- financial and accounting data from the Romanian Ministry of Finance (balance sheets and profit and loss accounts) for production, value added, employment (average number of employees expressed in terms of the full-time equivalent), cost structure for the four CI categories and for the data at national level in the 2002-2005 period (which bore some resemblance to the methodology for determining the indicators of statistical-financial reporting based on the balance sheet) in accordance with the CANE four-digit classification;
- foreign trade data (exports FOB, imports (CIF), trade balance) provided by the National Institute of Statistics (NIS) for the 2002-2005 period.

An estimate of the share of the economic contribution in the three non-core industries (interdependent, partial and non-dedicated support) was made using questionnaires and interviews for each non-core group. We also used comparisons with the copyright factor from other countries, especially to obtain benchmarks, control figures or confidence intervals. For the interdependent industries, a 100 per cent share of the economic contribution of copyright activities (i.e. a copyright factor of 1.0) was not applied, as was done in other national studies.

The shares of the copyright factor that we used differed to varying degrees from those used in other countries.

Efforts were made to estimate the annual weight of copyright factors for each component of the non-core industries, taking into consideration the percentage share of CI activities in turnover, value added and employment for the most important firms included in the survey.

The three categories of percentage shares (in turnover, value added and employment) were used to determine an aggregate index based on weighted average, corroborated by the estimates and approximations in answers to questionnaires and in interviews. The idea of using a constant average copyright factor for the whole period was considered unsuitable by specialists. Their judgments and arguments in favor of annually-differentiated copyright factors related mainly to the variations in an emergent transition economy characterized by variable changing structures.

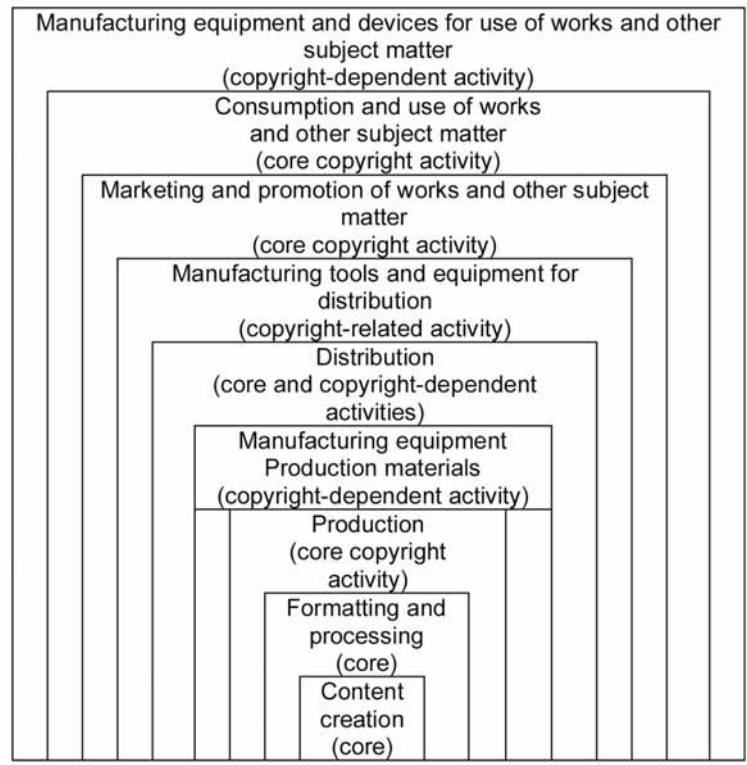
The value of imports and exports is based on FOB prices for exports and CIF prices for imports. Imports and exports do not include goods in transit, goods that have temporarily entered or left the country (unless for processing), goods purchased by international organizations for their own use in Romania or goods sent for repair.

CIs are characterized by a strong spillover or radiation effect, the nature, amount and intensity of which are specific to each sector and give differing levels of importance to their economic and social contribution. In terms of input-output analysis, copyright activities in Romania distributed their goods and services to 74 out of a total of 105 branches of the national economy in 2004.¹ There are fewer upstream delivery branches to CIs.

¹ Calculations on the basis of Input-Output Tables for 2003 in National Accounts 2002-2003, National Institute of Statistics, Statistical Studies and Analyses, 2006, pp.125-154



Figure 1. Layers of Economic Activity Related to the Production, Packaging and Distribution of Material Protected by Copyright and Related Rights



Source: The Contribution of Copyright and Related Rights to the European Economy, *Final Report 2003*, p.18, and *WIPO Guide*

Adjusted GDP is the main macroeconomic aggregate of national accounts, representing the final results of the production activity of resident production units, and has been calculated according to the income approach. It does not include import duties, product subsidies or estimates for the unofficial economy and the informal and informal sectors (underground labor and value added tax evasion, undeclared input of family associates and the self-employed).

2.2 Core Copyright Industries

These are the activities that generate end products heavily dependent on copyright protection and based entirely on it. In other words, this basic classification of industrial-creative activities applies to the creation, manufacture and processing, distribution or sale of works or other copyright-protected products. Core industries have been regarded as making a 100 per cent contribution to creating value added in the national economy.

On the basis of the WIPO and ISIC² classifications for core industries, and also that for products and activities in Romanian statistics, the following 31 industries conforming to the CANE³ code were included.

² UN Activity Classification – ISIC Rev.3.1 <http://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=17&Lg=1>

³ CANE Rev 1 – the new version of the National Economy Activities Classification approved by Order No 601/26.11.2002 (OM. No 908/13.12.2002). The first CANE version, approved by Governmental Decision No 656/1997, was designed to ensure the identification and codification of all activities in an integrated system in compliance with the stipulations of Council Regulation 3037/1990 of the European Economic Community and harmonized with the Activities Classified List of the European Community, NACE Rev 1. In 2001 the National Institute for Statistics initiated the lining-up of the new version of European classification NACE Rev 1.1 as part of the strategy of harmonizing Romanian statistics with European statistical regulations and standards, which corresponds to the tasks assumed under Chapter 12 (Statistics) of Romania’s EU Accession dossier (see <http://recom.onrc.ro/obco.html> CANE Rev 1 - the new version of the National Economy Classification).

Table 2.1. Core Copyright-Based Industries

CANE CODE	DESCRIPTION
2211	Book publishing
2212	Newspaper publishing
2213	Publishing of journals and periodicals
2214	Publishing of sound recordings
2215	Other publishing
2221	Printing of newspapers
2222	Printing n.e.c.
2223	Bookbinding
2224	Pre-press activities
2225	Ancillary activities related to printing
2231	Reproduction of sound recordings
2232	Reproduction of video recordings
2233	Manufacture of television and radio receivers, sound or video recording or reproduction apparatus and associated goods
7221	Software publishing
7222	Other software consultancy and supply
7230	Data processing
7240	Database activities
7440	Advertising
7481	Photographic activities
9112	Activities of professional organizations
9211	Motion picture and video production
9212	Motion picture and video distribution
9213	Motion picture projection
9220	Radio and television activities
9231	Artistic and literary creation and interpretation
9232	Operation of arts facilities
9233	Fair and amusement park activities
9234	Other entertainment activities n.e.c.
9240	New agency activities
9251	Library and archive activities
9272	Other recreational activities n.e.c.

Core industries were selected according to the nine WIPO groups which comprise the following: press and literature; music, theater and opera; movies and video; radio and television; photography; software and databases; visual and graphic arts; advertising services and collective copyright management.

2.3 Interdependent Copyright Industries

These industries are involved in the production, processing and sale of equipment whose integral or main function is to facilitate the creation, production or use of copyright-protected works or products (WIPO Guide, 2003).

Interdependent industries ensure a functional relationship between copyright production and business services, transport, purchasing production factors and investment goods. They are characterized by their complementarity in relation to core industry activities and by the interface between them and other related activities. Our study used the classified list of interdependent industries set out in Table 2.2 in accordance with Groups 1 and 2 from the WIPO Guide.



Table 2.2. List of Interdependent CIs

CANE Code	Description
2112	Manufacture of paper and paperboard
2123	Manufacture of other articles of paper and paperboard
2464	Manufacture of photographic chemicals
2465	Manufacture of prepared unrecorded media
3002	Manufacture of computers and other data-processing equipment
3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods
3611	Manufacture of chairs and seats
3612	Manufacture of other office and shop furniture
3613	Manufacture of other kitchen furniture
3614	Manufacture of other furniture
3630	Manufacture of musical instruments
3650	Manufacture of games and toys
6420	Telecommunications
7260	Other computer-related activities

According to the WIPO classification, a first group of interdependent CIs comprises the retail and wholesale processing industry, including television, radio receivers, CDs, DVDs, cassette players, electronic game equipment and other similar equipment; computers and related equipment and musical instruments. The principal function of the interdependent industries is to facilitate the use of creative materials and products. A second group, less closely related to creative materials, called partial copyright industries, comprises processing and the retailing and wholesaling (sale and rental) of photographic and cinematographic apparatus, photocopiers, form printing equipment and paper.

The activities of these industries do not relate mainly to creative material, but they do contribute to facilitating its use, especially with respect to equipment and technical means that may also be used for other purposes.

The contribution of these industries in the use of creative material subject to copyright provisions was determined by combined quantitative and qualitative analysis, which involved working out the specific volume of activity and calculating the copyright factor in the turnover achieved by active economic participants in the national economy between 2002 and 2005, with qualitative “adjustment” estimates being also made by experts. This was paralleled by the distribution of a questionnaire to representative economic players in the selected fields, and the conduct of interviews with the managements of some of those entities. The aim was to use annual statistical and fiscal statements to adjust the quantitative indicators worked out, and thus to establish the end value of the copyright factor.⁴ The average percentage value of the copyright factor corresponding to the interdependent industries was 17 per cent in 2005, a slight decrease compared with 2002. This evolution (Table 2.3) is attributable to the highly differentiated dynamic of activities in the national economy, including those relating to copyright, against the background of the economic relaunch and the changes brought about by Romania’s accession to the EU.

⁴The same methodology was applied for assigning the copyright factor to two other groups of industries, i.e. partial and non-dedicated.

Table 2.3. Copyright Factor Calculated in Relation to Total Turnover (=1.0) for Interdependent CIs

Industry	2002	2003	2004	2005
Manufacture of paper and paperboard	0.40	0.32	0.37	0.34
Manufacture of paper and paperboard articles	0.20	0.31	0.12	0.13
Manufacture of photographic chemicals	0.45	0.49	0.49	0.50
Manufacture of prepared unrecorded media	0.75	0.82	0.89	0.89
Manufacture of computers and other data processing equipment	0.53	0.61	0.62	0.60
Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	0.63	0.65	0.69	0.70
Manufacture of chairs and seats	0.02	0.01	0.03	0.04
Manufacture of other office and shop furniture	0.10	0.12	0.14	0.15
Manufacture of other kitchen furniture	0.01	0.03	0.02	0.03
Manufacture of other furniture	0.03	0.05	0.07	0.045
Manufacture of musical instruments	0.63	0.69	0.75	0.07
Manufacture of games and toys	0.49	0.52	0.57	0.57
Telecommunications	0.23	0.24	0.26	0.14
Other computer-related activities	0.56	0.60	0.60	0.56
Total Interdependent	0.23	0.23	0.24	0.17

The average copyright factor for foreign trade was 0.43 for interdependent CIs, which were differentiated according to the categories of activities included in CANE.⁵ It should be mentioned that the statistical information for exports and imports comes from the NIS database, and is based on the customs statements for exports and imports gathered from Romania by the National Customs Authority. Exports and imports were classified according to the combined classification list, which also forms the basis for customs tariffs; the corresponding CANE rev. 1 classification data is determined on the basis of conversion tables. The value of exports and imports was calculated at the applicable FOB prices for exports and CIF prices for imports. The export balance was worked out by converting the CIF imports into FOB imports by means of a conversion coefficient of 1.0834.⁶

2.4 Partial Copyright Industries

These are activities relating to creative materials or potentially involving creation, production or processing work, exhibition, distribution or sale.

For the purposes of our study the partial industry classification list includes the 25 industries presented in Table 2.4.

⁵ A similar methodology was also used for estimating the copyright factor for the other groups, partial and non-dedicated.

⁶ See the methodological notes from the Romanian Statistics Yearbook, pp 670 – 671, NSI, Bucharest.

Table 2.4. List of Partial Industries

CANE Code	Description
1740	Manufacture of made-up textile articles, except apparel
1751	Manufacture of carpets and rugs
1754	Manufacture of other textiles n.e.c.
1760	Manufacture of knitted and crocheted fabrics
1771	Manufacture of knitted and crocheted hosiery
1810	Manufacture of leather clothes
1822	Manufacture of other outerwear
1823	Manufacture of underwear
1830	Dressing and dyeing of fur, manufacture of fur articles
1930	Manufacture of footwear
2612	Shaping and processing of flat glass
2613	Manufacture of hollow glass
2621	Manufacture of ceramic household and ornamental articles
2630	Manufacture of ceramic tiles and flags
2861	Manufacture of cutlery
3621	Striking of coins
3622	Manufacture of jewelry and related articles n.e.c.
7420	Architectural and engineering activities and related technical consultancy
7487	Other services mainly rendered to enterprises
9133	Activities of other membership organizations n.e.c.
9252	Museum activities and preservation of historical sites and buildings

The copyright factor in 2005 for this group of industries was 0.09, a slight increase compared with 2002, as the industries of the group recorded relatively slight fluctuations in value for their activity.

Table 2.5. Copyright Factor in Relation to Total Turnover (=1.0) of CI Partial Industries

Industry	2002	2003	2004	2005
Manufacture of made-up textile articles, except apparel	0.01	0.01	0.01	0.02
Manufacture of carpets and rugs	0.03	0.02	0.02	0.03
Manufacture of other textiles n.e.c.	0.02	0.02	0.02	0.02
Manufacture of knitted and crocheted fabrics	0.02	0.03	0.04	0.06
Manufacture of knitted and crocheted hosiery	0.01	0.01	0.02	0.02
Manufacture of leather clothes	0.05	0.06	0.06	0.04
Manufacture of other outerwear	0.06	0.07	0.07	0.07
Manufacture of underwear	0.03	0.03	0.03	0.04
Dressing and dyeing of fur, manufacture of articles of fur	0.02	0.02	0.03	0.03
Manufacture of footwear	0.10	0.11	0.10	0.10
Shaping and processing of flat glass	0.08	0.08	0.07	0.07
Manufacture of hollow glass	0.17	0.19	0.19	0.20
Manufacture of ceramic household and ornamental articles	0.32	0.32	0.34	0.33
Manufacture of ceramic tiles and flags	0.07	0.09	0.09	0.60
Manufacture of cutlery	0.01	0.02	0.02	0.02
Striking of coins	0.35	0.32	0.31	0.31
Manufacture of jewelry and related articles n.e.c.	0.15	0.17	0.15	0.17
Architectural and engineering activities and related technical consultancy	0.12	0.19	0.12	0.12
Other services mainly rendered to enterprises	0.04	0.05	0.07	0.07
Activities of other membership organizations n.e.c.	0.07	0.07	0.08	0.60
Museum activities and preservation of historical sites and buildings	0.27	0.28	0.18	0.19
Total Partial	0.08	0.09	0.08	0.09

If one analyzes the copyright factor for interdependent industries alongside that for the partial industries, one might observe a divergence in the average for the total group, but in our view this is a one-off occurrence, due largely to the development of relevant legislation and the “compliant” behavior of the economic players in response to new functional needs. An increase is to be expected for the impact of the interdependent industry group, with a more marked rise in the value of the indicator in comparison with the partial industries group.

The copyright factor for foreign trade, determined by a similar methodology on the basis of the turnover factor, was 0.149.

2.5 Non-Dedicated Support Industries

Non-dedicated support CIs include 36 activity groups from the CANE code, where one section is related to facilitating the communication, distribution or sale of copyright goods, which for the most part are connected with transport, wholesale and retail, telephony and the Internet (Table 2.6). These industries have more to do with the business environment and spillover effects, so only some of their activities relate to core copyright-based industries.

Table 2.6. List of Non-Dedicated Support CIs

CANE Code	Description
51	Wholesale trade and commission trade, except for motor vehicles and motorcycles
52	Retail trade, except for motor vehicles and motorcycles; repair of personal and household goods
60	Land transport; transport <i>via</i> pipelines
61	Water transport
62	Air transport
63	Supporting and auxiliary transport activities; travel agency activities
64	Post and telecommunications
7133	Rental of office machinery and equipment, including computers
7250	Maintenance and repair of office, accounting and computing machinery

The impact factor for this group of industries was around 0.01 in 2005, a slight increase compared with 2002. The ratio of the copyright factor value was 1:5 in comparison with the partial CIs, and approximately double that of the interdependent CIs.

Table 2.7. Copyright Factor in Relation to Total Turnover (=1.0) of the Non-Dedicated Industries (%)

Industry	2002	2003	2004	2005
Wholesale and commission trade, except for motor vehicles and motorcycles	0.01	0.02	0.02	0.02
Retail trade, except for motor vehicles and motorcycles; repair of personal and household goods	0.01	0.01	0.01	0.01
Land transport; transport <i>via</i> pipelines	0.02	0.02	0.02	0.02
Water transport	0.02	0.02	0.02	0.02
Air transport	0.03	0.03	0.03	0.02
Support and auxiliary transport activities; travel agency activities	0.01	0.01	0.01	0.01
Post and telecommunications	0.05	0.05	0.05	0.04
Rental of office machinery and equipment, including computers	0.01	0.01	0.01	0.01
Maintenance and repair of office, accounting and computing machinery	0.01	0.01	0.01	0.01
Total Non-Dedicated	0.01	0.01	0.01	0.01

2.6 Objectives

The major objectives of this study, to which our entire theoretical-methodological approach was subordinate, centered on measuring the total economic contribution and the contribution of components of the CIs, determined mainly by three indicators: production and value added; labor force and employment and foreign trade.

Using these basic indicators, we have attempted to determine other indicators of performance and structure of the entire CI sector, and of its costs compared with the national average.

The analysis was extended to cover the influence on the economy of CI wages, depreciation, gross profit, duties and taxes.

We also carried out inter- and intra-activity comparisons on groups of CIs (core, interdependent, partial and non-dedicated).

Our analysis relates to the period from 2002 to 2005 when, after a sharp decline caused by the cost of its transition to a market economy, the Romanian economy succeeded in showing an upward trend in macro-economic terms, recording increases in GDP and thus improving its parameters of macro-stability and market mechanisms. For certain indicators (especially the number of economic agents within CIs), statistical data from the 2002-2005 period was available.

At the same time, our research was able to assess the influence of several qualitative and quantitative factors on the size and structure of the economic contribution of CIs. Those factors were: the availability of production factors (labor and capital); volume and dynamics of demand; interference with upstream and downstream industries; the development of the business environment and State intervention.

Depending on the objective pursued, calculations for the indicators analyzed are expressed as current and/or constant prices (in 2002). The method of chain indices was also used. The deflation of the indicators analyzed was based on the consumer price index for each year.

Chapter 3

Economic Contribution of the Copyright-Based Industries

In this Chapter we shall analyze the economic contribution of CIs and their components to production, value added, employment and foreign trade in Romania for the period from 2002 to 2005, and thereby attempt to deduce some indices from the viewpoint of size, structure, dynamics and efficiency at the macroeconomic level.

3.1 General Economic Premises

In the period from 2002 to 2005, CIs were developed as part of a relatively advanced phase of transition to a market economy, characterized by the following features:

- the shift in the evolution of the economy since 2000, from negative to positive GDP growth rates, pointing to a relatively high degree of recovery of the national economy;
- substantial growth in the private sector, with the highest share in the economy, and with a major part played by the copyright industries, although the public sector is still active in this field;
- a population decrease from 21.8 to 21.6 million due to negative birth rates and emigration of the labor force;
- dominance of the service sector in both relative and absolute terms (53.4 per cent of total employment) as a result of a decline in the primary and secondary sectors, digitalization and the more rapid development of some financial and public services;
- an increase in labor productivity from 32.10 per cent to 40.90 per cent of the average EU level - as against 25 per cent in the period from 2000 to 2005;⁷
- Romania's NATO membership in 2004 and preparation for EU accession in 2007 were active factors of development, stability and security, as the estimated cost of integration was less than the benefits received;
- the harmonization of legislation between Romania and the EU, including IPRs and other international agreements and commitments, has contributed to a better understanding and enforcement of the law on the part of CIs.

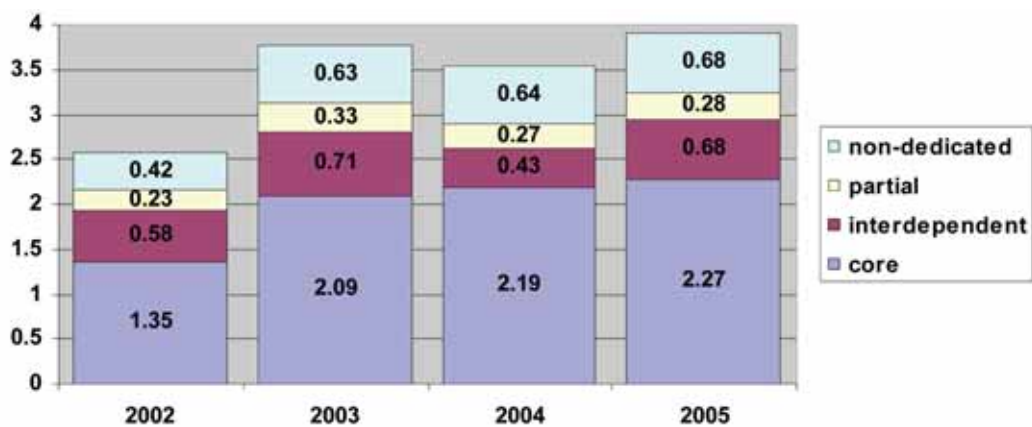
3.2 Turnover - Total Output

The economic contribution of CIs to total output for the 2002-2005 period revealed a general upward trend (Graph 3.1) with respect to their activity as a whole, but with some greater or lesser differences between CI components. In the case of non-dedicated industries there has even been a slight decrease due to higher growth rates in other sectors.

⁷ See: *The Sectoral Operational Program, Increase in Economic Competitiveness*, Government of Romania, Ministry of Finance, June 2007



Graph 3.1. CIs and Their Share in Total Output (%)

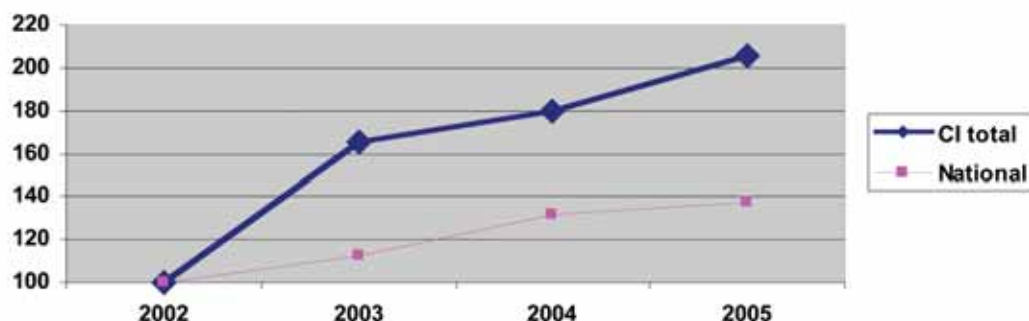


Source: Ministry of Finance

The contribution of CIs to total production increased from 2.58 per cent in 2002 to 3.89 per cent in 2005, with the highest increase recorded by the core industries, i.e. by those cultural industries that are based on artistic creativity, considered to be a growth engine for the whole sector.

The growth in the total output of CIs was higher than that of the entire national economy, the highest rates being recorded within the core, partial and interdependent industries.

Graph 3.2. Indices of CI Total Output Compared with the National Level (%)



Source: Ministry of Finance

Table 3.1. Indices of Output of Total CIs and Components in the 2002-2005 Period (2002=100)

	2003	2004	2005
Core	174.37	213.69	231.50
Interdependent	137.12	96.82	155.36
Partial	162.30	157.74	168.29
Non-dedicated	169.42	199.36	221.16
Total CIs	164.09	180.03	207.03
Total National Economy	112.47	131.56	137.70

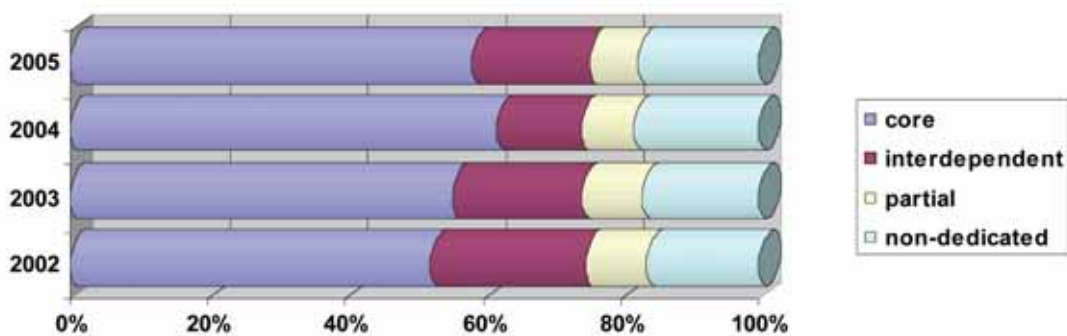
Source: Ministry of Finance

The indices with fixed bases used in the comparative analysis of the output of CIs and the evolution of their components reveal the following:

- the total output of CIs followed an upward trend from 2002 to 2005 which was higher than the national average;
- the highest dynamic was recorded by the core industries (2.3 against the average 1.3 for the national economy);
- the interdependent industries also showed a high dynamic (1.5), although that actually constituted a sharp drop.

The most significant shares, over 50 per cent of total output, were those of the core CIs followed by the interdependent and non-dedicated.

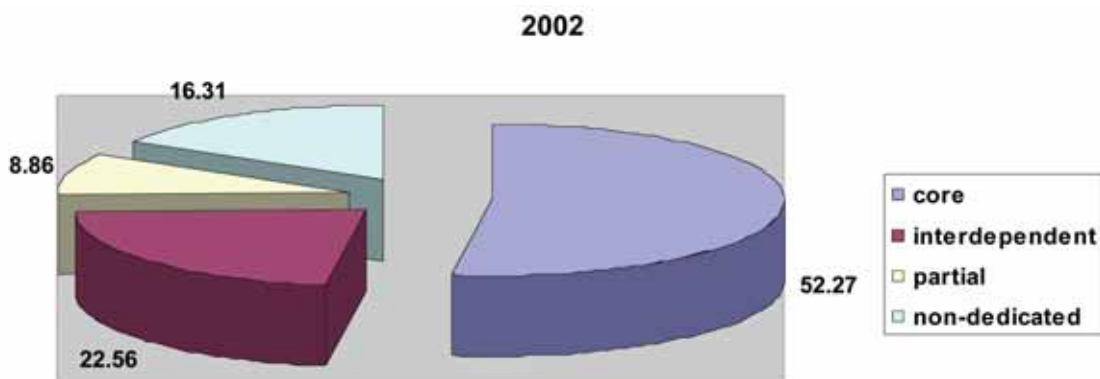
Graph 3.3. CI Structure by Components



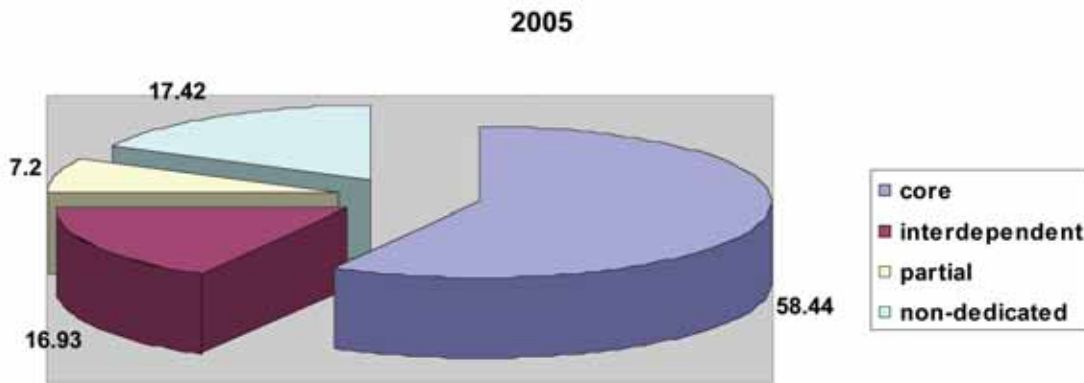
Source: Own calculations, based on data from graph 3.1

In the 2002-2005 period, the favorable state of general economic growth resulted in an increase in the core CI share in total production from 52.05 per cent to 58.24 per cent. Less favorable conditions for the domestic manufacture of paper, furniture, textiles and computers, due to competitive imports, contributed to a drop in the share of both interdependent and partial copyright industries.

Graph 3.4. Outcome Structure of CIs by Components (%)



Source: Ministry of Finance



Source: Ministry of Finance

3.3 Gross Value Added (GVA)

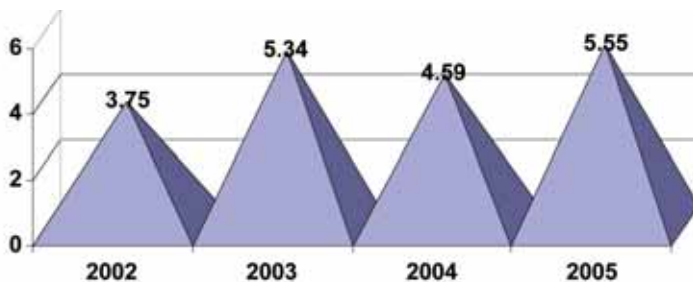
The share of of CI gross value added (GVA) in GDP

The CI contribution to GVA and GDP was estimated both for the CIs overall and for their four components (core, interdependent, partial and non-dedicated support industries) using the methodology described in the previous Chapter. The absolute values of CIs and their components are presented in the annexes, so in the following graph we show only relative values, i.e. shares in GDP.

Only the GVA was used to determine the size of GDP; we refer to this as the adjusted GVA or GDP (not including the informal economy and home consumption).

For CIs overall, adjusted GDP increased by 1.8 per cent in 2005 compared with 2002.

Graph 3.5. Evolution of CI Share in Adjusted GDP, 2002-2005 (%)



Source: Ministry of Finance

The share of value added in GDP is different in intensity and the nature of its evolution (Table 3.2).

Table 3.2. Share of CIs in GDP for the 2002-2005 Period (%)

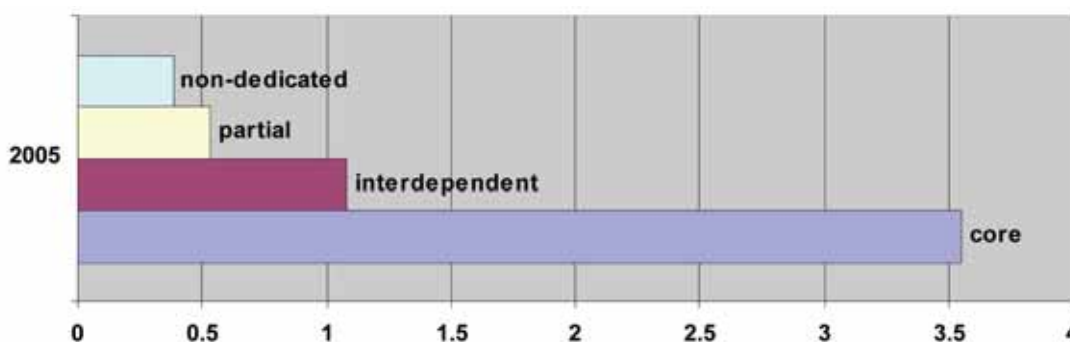
	2002	2003	2004	2005
Total CIs, of which:	3.75	5.34	4.59	5.55
Core	2.06	3.23	3.33	3.55
Interdependent	0.96	1.09	0.37	1.08
Partial	0.45	0.66	0.53	0.53
Non-Dedicated	0.28	0.36	0.36	0.39

Source: Ministry of Finance

This table shows that:

- from 2002 to 2005, the total share of CIs in GDP increased from 3.75 per cent to 5.54 per cent, which proves the importance of these industries to Romania's economic development; indeed the share is close to that of some other major industries such as construction, transport or mining, and exceeds that of hotels and restaurants;
- within the industry components of CIs, the core industries made the most significant contribution to GDP (3.54 per cent), followed by the interdependent (1.08 per cent) and the partial (0.53 per cent).

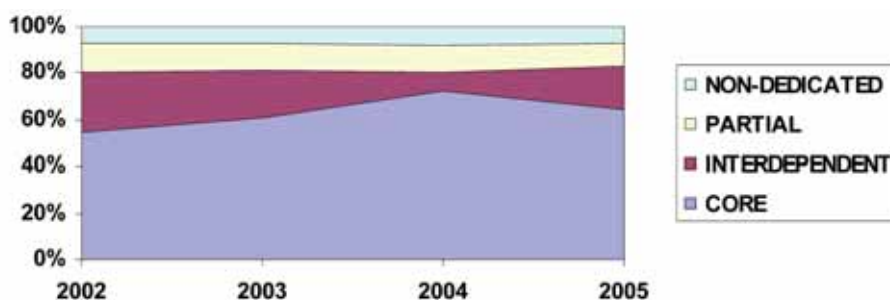
Graph 3.6. Contribution of CIs to GDP by Component Elements in 2005 (%)



Source: Ministry of Finance

Whereas the general trend in the share of CIs in total GDP was upward, variations in its size were nevertheless recorded from one year to the next, which illustrates the volatile nature of the activity, its income being highly sensitive to the influence of internal and external supply and demand factors.

Graph 3.7. Percentage Distribution of Value Added among CI Components against CI Total Value Added



Source: Calculations based on data from Table 3.2

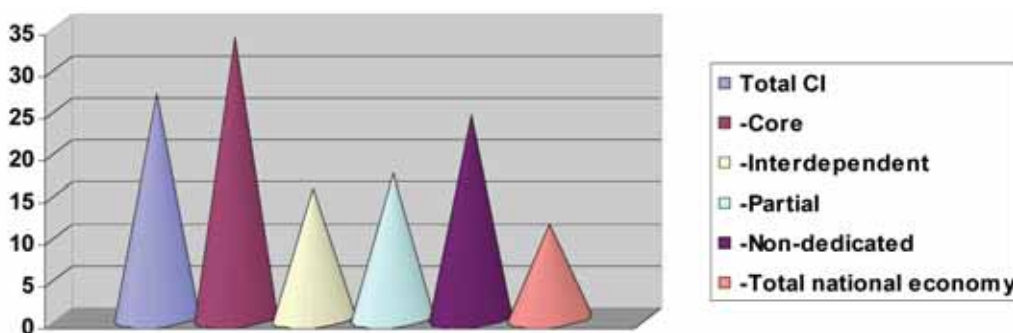
The highest share of CI GVA was achieved by the core industries (over 60 per cent from 2003 to 2005), which resulted in a powerful spillover to the other component industries (interdependent, partial and non-dedicated support) and to other sectors and activities in the national economy.

Unlike in the case of the non-core components, where the share in total value added showed greater or smaller variations from one year to the next, a general upward trend was noticeable in the share of core CIs, although this does not preclude cyclical evolution in the future. The increasing importance of copyright-protected industries is, however, directly related to the development of the knowledge-based society and information and communication technologies (ICT).

The change in gross value added

For the period analyzed CIs experienced an average yearly growth rate of more than double the GDP rate, the most significant dynamics being recorded by the core CIs and the non-dedicated industries.

Graph 3.8. Average Yearly GVA Growth Rate of CIs and Their Components, 2002-2005



Source: Own calculations

The indices with chain bases and advancement indices of value added dynamics within CIs reveal the superiority of those dynamics to the national average, especially for core and partial industries, and the fluctuations from one year to the next confirm the sensitivity of the field to various factors (economic, legal, political, cultural, institutional, environmental, etc.).

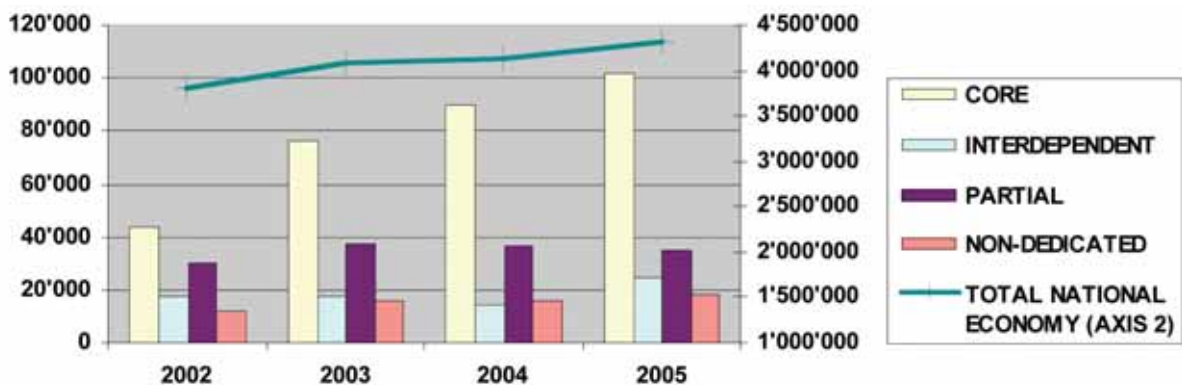
3.4 Labor Force and Employment

CIs are also an important area of activity in terms of employment levels and either full-time or part-time job creation. In our research, we used only data on the average number of employees, and they are measured in full-time equivalents. We should however mention that part-time working has followed an upward trend in copyright-based industries, and that will bring about significant changes in the employment structure in the future.

There have also been some significant changes in work content due to ICT and other technical changes associated with the powerful dynamics of job creation or job replacement.

The average level of qualifications in CIs, which is already higher than the overall national level, will show a continuing upward trend in the future owing to the incorporation of new knowledge and the skills needed to operate new technologies, as well as the application of modern management methods to creative activities and the development of an entrepreneurial culture as the backbone of career advancement.

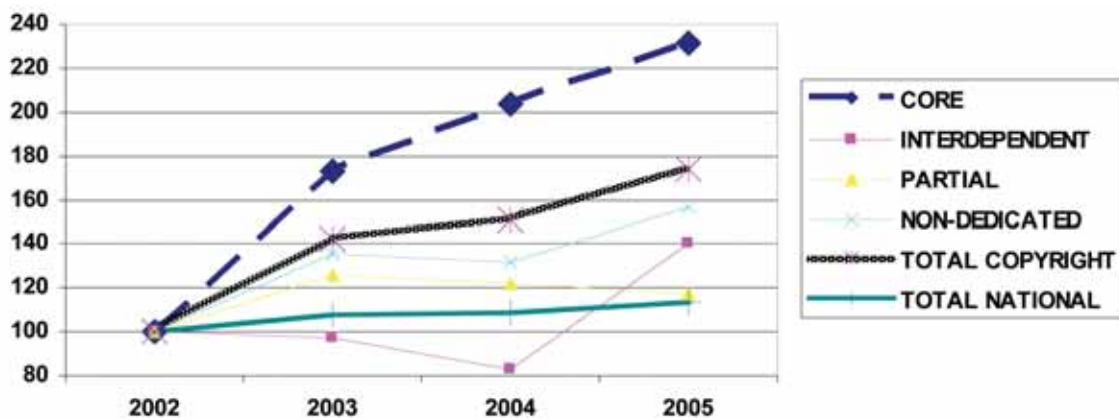
Graph 3.9. Average Number of Employees in CIs, 2002-2005



Source: Ministry of Finance

The highest number employed was in the core industries, while the lowest was in the non-dedicated support sector. There has been a significant evolution in employment dynamics in the core industries.

Graph 3.10. Growth of Average Number of Employees, 2002-2005 (2002=100)



Source: Ministry of Finance

As Graph 3.10 shows, there was an important rise in the number of employees in CIs overall (74 per cent), compared with employment growth nationally (average 13 per cent). Employment in the core industries more than doubled from 2002 to 2005 (up 131 per cent). The rapid increase in such a short time is explained by new developments in CIs that occurred during the transition period owing to economic and social changes, liberalization and the new democratic regime. The privatization of State-owned enterprises and the influx of foreign direct investment have also contributed to the development and strengthening of CIs in spite of the "stop-go" evolution of these processes, especially at the beginning of the transition to a market economy.

The opening up of the Romanian economy and society in general has also contributed to higher employment in CIs. Press freedom, an increase in the role of the civil society and the elimination of censorship have been positive job creation factors in the cultural industries. CIs have thus become a factor of job creation and unemployment reduction.

Table 3.3. Share of Employees in Total CIs at the National Level (%)

	Years			
	2002	2003	2004	2005
Total CIs, of which:	2.73	3.59	3.78	4.19
Core	1.16	1.86	2.17	2.36
Interdependent	0.47	0.42	0.35	0.58
Partial	0.79	0.92	0.89	0.82
Non-Dedicated	0.31	0.39	0.38	0.43

Source: Ministry of Finance and data from the Statistical Yearbook of Romania, NIS

The CI share in total Romanian employment reached 4.19 per cent in 2005. As a result of a sustainable increase in the average number of employees, the core industries accounted for 2.36 per cent and the non-core industries 1.83 per cent. These shares are close to those of some of the largest Romanian industries. The share of the processing industries in the total was 31.26 per cent in 2005, whereas in the national economy the construction sector accounted for 7.63 per cent, transport, storage and communications 7.0 per cent, transactions with fixed assets and other services 5.26 per cent and public administration and defense 3.66 per cent.

The number of employees in CIs increased 1.5 times as fast as the national average. The indicator was 2.6 for core industries, 1.2 for interdependent and 1.4 for non-dedicated. Throughout the 2002-2005 period the level of employment was above or below the national level, which may be due to an extensive and continuous process of adjustment of the companies to national and/or international developments and trends. Employment dynamics are also correlated with legislative developments and with the operational state of the newly created legislative and institutional framework.

Labor Productivity

An analysis of production, GVA and employment indices revealed a forward movement of result (output) indicators compared with the number of employees (input), which reflects an increase in CI labor productivity. This labor productivity calculation was made using the ratio of GVA to the average number of employees for the 2002-2005 period.

Table 3.4. Labor Productivity for Total CIs, CI Components and the National Economy

	Years							
	2002		2003		2004		2005	
	'000 €/ Employee	% compared to National Economy	'000 €/ Employee	% compared to National Economy	'000 €/ Employee	% compared to National Economy	'000. €/ Employee	% compared to National Economy
Total CIs, out of which:	7,370	138	7,842	149	7,750	121	10,458	133
Core	9,514	178	9,155	174	9,823	154	11,869	150
Interdependent	11,023	206	13,696	260	6,696	105	14,716	187
Partial	3,056	57	3,789	72	3,798	59	5,080	64
Non-Dedicated	4,872	91	4,863	92	6,119	96	7,224	92
Total National Economy	5,357	100	5,275	100	6,386	100	7,887	100

Source: Ministry of Finance

The labor productivity level for total CIs, core and interdependent was higher than the national average for the entire period, the differences in 2005 being 1.32:1, 1.51:1 and 1.86:1 respectively. This could be explained by greater capital-intensive production in these sectors compared with others. The superior labor productivity of CIs affords a significant potential for competitive and efficiency growth on both domestic and international markets, including a contribution to the process of convergence.

With respect to the dynamics of labor productivity, the highest growth is found in 2005 compared with 2002 for the partial, non-dedicated support and interdependent industries. Growth of employment in the core industries has tended to plateau, on the other hand, as the indicator has reached a relatively high level compared with the entire national economy, indicating that future growth will be relatively hard to achieve.

Labor productivity fluctuated throughout the CI sector, especially in the interdependent, partial and non-dedicated support industries, while small annual variations were recorded for the CIs, a fact which confirms our previous remark regarding a certain limit for the growth of productivity in the sector.

Table 3.5. Annual Change in GVA per Employee

	Years		
	2003	2004	2005
Total CIs, of which:	110.9	95.3	110.7
Core	100.3	103.5	99.1
Interdependent	129.5	47.2	180.2
Partial	129.2	96.7	109.7
Non-Dedicated	104.0	121.4	96.8
National Total	102.6	116.8	101.3

Source: Ministry of Finance

3.5. Total Wage Cost and Average Wage

The share of the total CI wage bill in the national total was 5.35 per cent in 2005 compared with 3.74 per cent in 2002, which is close to the share of CI GVA in GDP. The highest share of total CI wages was taken by the core industries (about 50 per cent, as shown in Table 3.6), which confirms the importance of this component in the total CI figure.

Table 3.6. Share of Total CI Wages in the National Total (%)

	Years			
	2002	2003	2004	2005
Total CIs, of which:	3.76	4.72	4.61	5.37
Core	1.83	2.88	3.10	3.50
Interdependent	1.05	0.64	0.40	0.73
Partial	0.59	0.88	0.78	0.77
Non-Dedicated	0.30	0.33	0.34	0.37

Source: Ministry of Finance

The nominal wage level in CIs, with the exception of the non-dedicated support industries, was above the national average for the entire period analyzed.

In the core and interdependent industries, wages were over 50 per cent higher in 2005 than the national average, apart from which a fall in wage differences of over 30 per cent among CI components is worth mentioning.



Table 3.7. Ratio of Monthly Gross Nominal Average CI Salary to Average Salary at National Level (%)

	Years			
	2002	2003	2004	2005
Total CIs:	138	131	122	128
Core	158	155	143	148
Interdependent	224	151	111	126
Partial	75	95	88	94
Non-Dedicated	95	85	90	86

Source: Ministry of Finance

The data on wages reveal a tendency to fluctuate, especially in the non-core industries. In the opinion of the specialists interviewed, a wage and income inequality could be seen in CIs as a whole and, to a lesser extent, in the interdependent industries, with a relatively small number of employees receiving very high salaries and the majority of the others lower ones. This could be partly explained on the one hand by the relative importance of creativity, and on the other by the specific, monopolistic nature of the competitive market in this field.

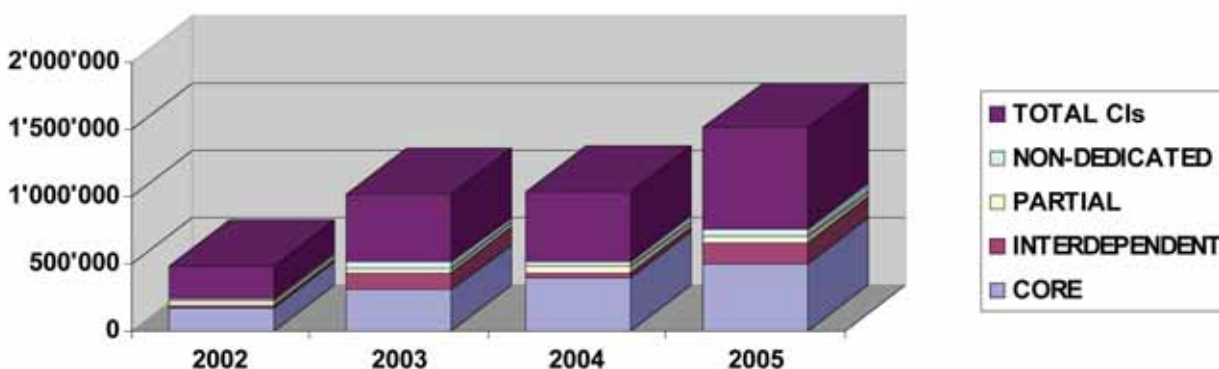
3.6 Profitability of Copyright-Based Industries

Even though CI goods share many characteristics with other sectors that have a greater or smaller time lag with respect to legal aspects and levels of piracy and counterfeiting, profitability in a market economy is crucial. We therefore consider the analysis of CI profitability useful as, to a greater or lesser extent, it influences the future development of such industries and their economic contribution. It is understood that one of the main problems of economic growth remains the allocation of profits for future investment in all fields.

The CI profitability analysis has been carried out using the gross operating profit, and the gross operating profit per employee, in relation to volume, structure and size and compared with the national average.

The core CIs make the greatest contribution to the operating profits of CIs, followed by the interdependent industries. If we take into account the fact that creative activities generate a higher GVA, it is normal that their profits will be greater than those of the other components (partial and non-dedicated). There was a significant evolution in 2003 compared with 2002.

Graph 3.11. Gross Operating Profit by CI Components, 2002-2005 ('000 euros)



Source: Ministry of Finance

According to our calculations, the share of the gross operating profits of CIs in the national total increased from 3.77 per cent to 6.63 per cent in the period analyzed. The highest increases were recorded for core industries (1.60 per cent) and interdependent industries (0.94 per cent).

Table 3.8. CI Profit Share in Total National Level (%)

	Years			
	2002	2003	2004	2005
Total CIs	3.78	6.64	5.48	6.40
Core	2.67	3.97	4.21	4.22
Interdependent	0.37	1.59	0.38	1.31
Partial	0.42	0.61	0.44	0.39
Non-Dedicated	0.32	0.48	0.44	0.48

Source: Ministry of Finance

The contribution of the component industries is close to that for GVA, turnover and employment. The gross operating profit per employee shows high and increasing values in the case of core industries. The interdependent industries experienced considerable fluctuation year on year, although their number followed a downward trend.

Compared with the national average, the operating profit per employee was obviously higher for interdependent and core industries and lower for partial and non-dedicated industries (Table 3.9).

Table 3.9. Ratio Between Profit per Employee for CIs and Profit per Employee at National Level

	Years			
	2002	2003	2004	2005
Total CIs	139	185	145	153
Core	230	213	195	179
Interdependent	79	378	108	227
Partial	54	66	50	48
Non-Dedicated	102	122	118	111

Source: Ministry of Finance

Of all the CIs, the core industries showed the highest share of operating profit (60 per cent), followed by the other component industries.

As for the evolution of the operating profit per employee, the highest growth rates were recorded for interdependent industries, while we noticed significant variations throughout the period for all component industries.

3.7 International Trade

CIs are a sector of economic, social and cultural activity strongly related to the import and export of copyright goods, or goods with a direct or indirect connection to them. In our research, the economic contribution of CIs to Romanian international trade was analyzed using export and import indicators (volume, growth rate and structure) for the 2002-2005 period. The empirical evidence was provided by the National Institute of Statistics for core, interdependent and partial industries only, while for the non-dedicated support industries the requisite information was not obtainable according to the established methodology.

Exports

From 2002 to 2005, the FOB value of exports for CIs increased from 122.7 million to 177.1 million euros (i.e. by a factor of 1.44), while the share in total exports was 0.84 per cent in 2002 and 0.80 per cent in 2005. Although the share in total exports is relatively low, it is still close to the equivalent for certain important commodities specific to Romanian exports.

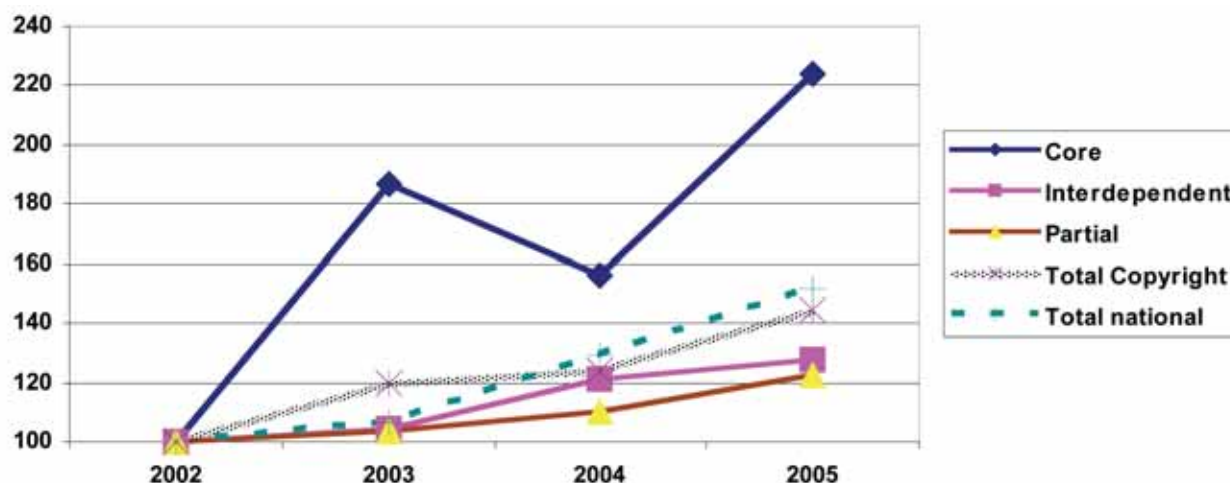
Table 3.10. CI Exports, 2002-2005 ('000'000 euros)

CI COMPONENTS	YEARS			
	2002	2003	2004	2005
Total CI Exports	122.7	147.1	152.3	177.1
Core	23.5	43.9	36.8	52.6
Interdependent	57.3	59.9	69.3	73.1
Partial	41.9	43.3	46.2	51.4
Total National Exports	14,675	15,614	18,935	22,255

Source: NIS database

In the period analyzed CIs followed an upward trend; they did however show annual fluctuations, which reflect not only variations in output due to internal factors and international circumstances, but also an inability to keep the competitiveness of Romanian exports constant. The fluctuations are also explained by the influence of the "fashion" factor, which presupposes a given creativity, adjustment and absorption capacity on the part of the Romanian economy, which in the case of CIs is evidence of the modest power of Romanian companies to impose their own brands on domestic and external markets.

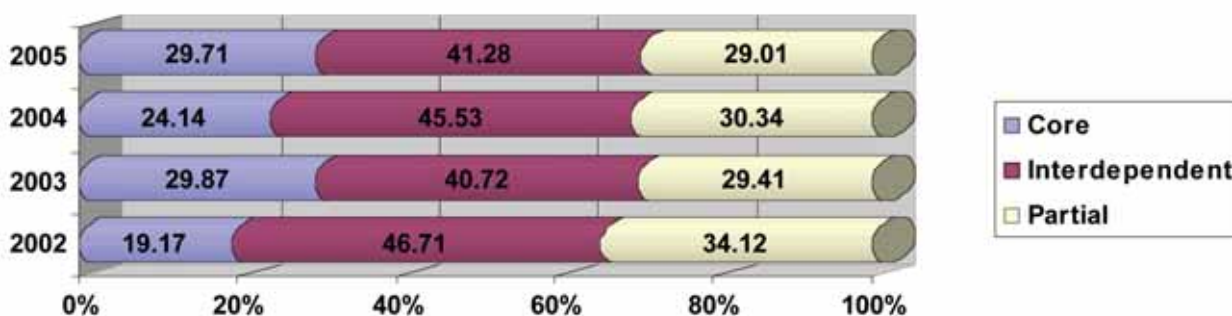
Graph 3.12. Dynamics of International Trade Compared with 2002 (=100)



Source: NIS database

The average annual growth rate of CI exports in the 2002-2005 period was 13 per cent. The core industries achieved 30.78 per cent, the interdependent industries 8.45 per cent and the partial industries 7.06 per cent. The increase in exports of the core industries substantially exceeded the national average increase in exports, which was 14.89 per cent.

Graph 3.13. Structure of Exports by CI Components, 2002-2005

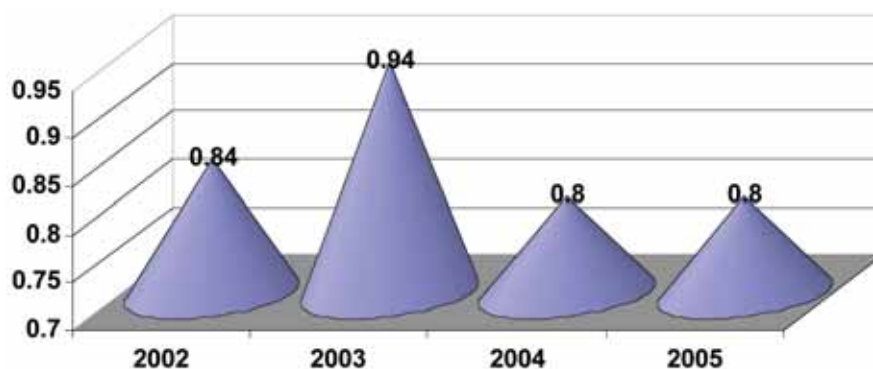


Source: NIS database

In the course of the period analyzed, an increased share in total CI exports of 10.54 per cent was noted for core industries while the share of the non-core industries decreased, revealing the core industries' ability to increase their contribution to the national export total.

The share of exports of copyright goods in total national exports ranged from 0.80 per cent to 0.90 per cent, which is a modest contribution compared with those of other, especially industrialized countries.

Graph 3.14. Share of CI Exports in Total Exports, 2002-2005 (%)



Source: NIS database

Imports

The import of copyright-protected goods, and of goods from related support industries, plays a very important part in the specific activities of CIs. The volume, dynamics and structure of these imports have been analyzed using the same static and dynamic indicators as in the case of exports.

Table 3.11. Volume and Dynamic of CI Imports ('000'000 euros)

CI Components	Years			
	2002	2003	2004	2005
Total CIs	205.9	263.9	330.5	424.9
Core	76.5	101.6	137.8	177.3
Interdependent	86.8	117.0	140.1	184.1
Partial	42.5	45.2	52.5	63.4
Total National Imports	18,881	21,201	26,281	32,568

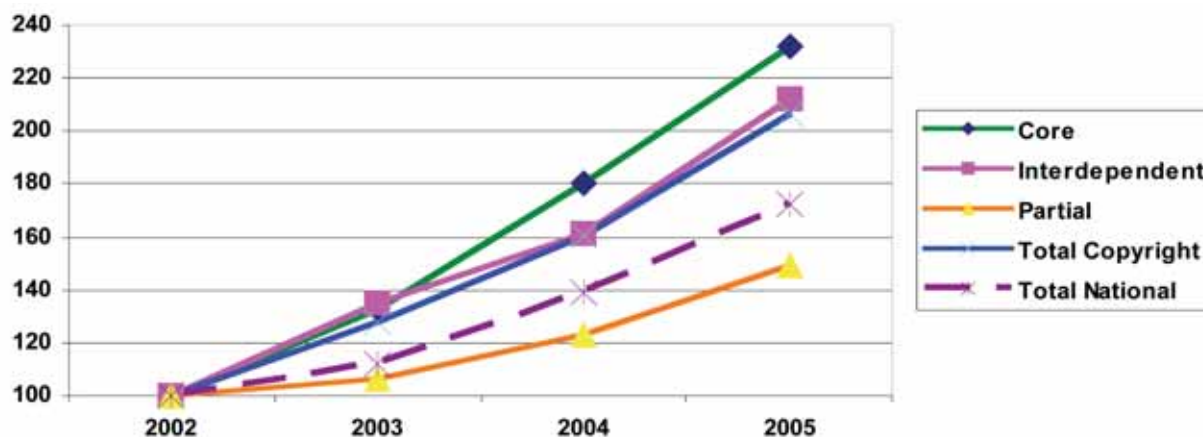
Source: NIS database

CI imports doubled in the period from 2002 to 2005. The highest increases were recorded by the core industries (over 130 per cent) and interdependent industries (over 110 per cent), compared with the national level of 70 per cent.



It is worth mentioning that CI imports showed a permanently upward tendency for all CI product categories; compared with exports, they were more dynamic and showed steady growth, which is explained by the liberalization of international trade in Romania, the elimination of the State monopoly and an increase in the economic and social contribution made by the import of cultural-creative goods.

Graph 3.15. Import Dynamics, 2002-2005 (2002=100)



Source: NIS database

Expressed in annual average growth rates, the dynamic of CI goods was as follows: total CIs 27.3 per cent, core industries 32.33 per cent, interdependent industries 28.46 per cent and partial industries 14.20 per cent. Taking into account that the annual average growth rate for total Romanian imports was 19.93 per cent, imports by CIs significantly exceeded the national figure in this respect.

As CIs were more dynamic in their imports than in their exports, the gap between the two indicators widened from 1.6 in 2002 to 2.4 in 2005, which led to a worsening of the CI trade balance deficit from 83.2 million euros to 247.7 million euros (Table 3.12). In other words CIs accounted for an increasing deficit in the Romanian current account and trade balances.

Table 3.12. CI Trade Balance ('000'000 euros)

	2002	2003	2004	2005
Core	-53,010	-57,731	-101,119	-124,719
Interdependent	-29,540	-57,171	-70,812	-111,022
Partial	-0,706	-1,936	-6,306	-12,043
Total Copyright	-83,256	-116,838	-178,237	-247,784

Source: NIS database

The share of CI imports in the total for Romania increased from 1.09 per cent in 2002 to 1.30 per cent in 2005. The highest contributors to that result were the core (0.54 per cent) and the interdependent industries (0.57 per cent).

In conclusion, it can be stated that Romania is quite heavily dependent on the import of CI goods, the volume being close to that of other major industries. In order to obtain an improvement in the trade balance, the State should, through the free market economy, promote increased exports of copyright products with a view to exceeding the level of imports. Indeed a national strategy for export promotion is now being implemented in Romania with that in mind.

Chapter 4

The core copyright industries engage in activities relating to the creation, production, processing, presentation, communication, distribution and sale of copyright products, works and material. Integral to this sector are the cultural fields, in the traditional sense, as well as those that have to do with the software industry.

In 2005 the core copyright industries were responsible for around 2.27 per cent of total output and 3.55 per cent of Romania's GDP. They also provided a total of 101,801 jobs, or 2.36 per cent of the national average, while total wages earned in this sector represented 3.50 per cent of the national total.

According to our calculations, the share of core industries in total national employment and wage value was higher than the share in total gross output and GVA.

The higher level of labor productivity compared with the national level is explained by the fact that, in general, the components of core industries need better-qualified workers, especially if we bear in mind that many are associated with information and communication technology.

4.1 Evolution of the Number of Firms and Their Profitability

For some indicators, we used statistical data available at the National Registry of Commerce, which is under the authority of the Romanian Chamber of Commerce and Industry. The data refers to the number of companies, their turnover and their profits according to the industrial classification adopted for this study. An attempt was made to carry out research over a longer time span (2000 to 2005) for the core copyright industries.

Sub-chapter 4.1 was written on the basis of data supplied by the Chamber of Commerce and Industry, and is not comparable with other parts of this study for the period concerned (2002 to 2005). It offers additional information and allows for further commentary on the evolution of the number of firms and their profitability in the sector as a whole and its components.

The evolution of the number of firms in the core industries is a relevant indicator of development potential and the capacity to generate economic interdependency (through income generation, along with increased employment and intermediate and final consumption) between them and upstream and downstream companies.

Table 4.1. Evolution of the Number of Firms in Core Industries, 2002-2005

	Years					
	2000	2001	2002	2003	2004	2005
Total Core, of which:	3,873	7,354	4,866	8,988	13,277	16,381
Book publishing	328	675	389	598	746	819
Newspaper publishing	86	124	111	159	233	288
Publishing of journals and periodicals	68	128	97	155	215	269
Printing n.e.c.	586	748	640	838	1,053	1,174
Software publishing	440	829	580	1,061	1,470	1,712
Other software consultancy and supply	319	683	443	981	1,750	2,374
Data processing	166	373	211	444	643	755
Advertising	538	1,215	777	1,703	2,713	3,511
Secretarial and translation activities	217	412	247	466	775	1,008
Motion picture and video production	59	158	97	358	555	736
Radio and television activities	143	231	172	347	582	604
Artistic and literary creation and interpretation	60	174	89	229	422	569
Other entertainment activities n.e.c.	46	98	50	109	162	211
Other recreational activities n.e.c.	167	382	215	309	440	483

Source: *www.ListaFirme.ro*

The greatest shares of core industries in the total number of firms are in software publishing, consultancy and supply, advertising and book, newspaper, periodical and other printing.

The relevance of the number of firms must be analyzed in terms of their potential, the competition criteria of a market economy and economically favorable and/or unfavorable circumstances.

The number of core copyright industries increased over 4.22 times in 2005 compared with 2002 (see Table 4.1). The highest increases were in the following industries: film production (over 12 times); artistic and literary creation and interpretation (9.5 times); distribution and consultancy in relation to other software products (7.6 times); advertising (over 6.5 times); audio production (6.2 times); preparation work for pre-printing (6.1 times); data processing (4.5 times); secretarial and translation activities (4.6 times), and radio and television activities (4.25 times).

The steady growth in the number of firms reflects excessive market demand but also strong market competition, which imposes higher standards of quality and performance.

Even though there was an increasingly upward general trend in the number of firms, we did notice the existence of some periods of decline due to unfavorable economic and political circumstances (e.g. the elimination of certain tax advantages), which led to the disappearance of some companies, especially certain SMEs, which tend to be more vulnerable. The highest proportion of the total number of core CI firms is held by SMEs, which succeed in consolidating their market position, grow and go bankrupt or are taken over by larger enterprises.

The Evolution of Profitability

Empirical evidence from the Romanian Chamber of Commerce and Industry allowed us to ascertain the profitability of companies, in a disaggregated classification, in the form of a profit-to-turnover ratio at current and constant prices (Table 4.2).

Compared with 2000, profitability decreased, with significant differences in increase or decrease in component industries.

Table 4.2. Core CI Profitability: Evolution 2000-2005 (%)

Industry	2000	2001	2002	2003	2004	2005
Book publishing	7.97	12.63	10.48	15.69	14.94	14.47
Newspaper publishing	6.47	4.99	3.17	4.62	6.11	5.82
Publishing of journals and periodicals	5.13	5.49	4.96	6.01	9.11	10.67
Publishing of sound recordings	1.73	2.16	4.30	17.31	7.62	12.45
Other publishing	5.16	9.32	9.47	10.69	11.63	14.08
Printing of newspapers	4.91	3.35	3.07	3.29	4.67	4.82
Printing n.e.c.	19.09	19.40	21.39	18.16	16.76	19.14
Bookbinding	4.10	3.51	8.62	7.57	9.44	16.57
Pre-press activities	5.08	9.26	11.26	14.13	16.70	15.88
Ancillary activities related to printing	7.59	11.77	10.55	13.56	17.33	9.91
Reproduction of sound recording	8.00	13.06	12.08	12.40	10.22	16.25
Reproduction of video recording	3.94	18.03	18.56	1.01	3.34	0.59
Manufacture of television and radio receivers, sound or video recording or reproduction apparatus and associated goods	7.19	18.62	18.71	22.33	20.47	14.79
Software publishing	13.65	17.66	18.60	17.79	16.99	15.99
Other software consultancy and supply	10.83	13.75	21.29	20.76	16.53	16.50
Data processing	15.93	16.95	19.51	26.01	11.93	16.79
Database activities	15.10	28.72	36.27	38.07	32.16	18.87
Advertising	2.98	4.30	4.36	7.67	9.63	9.86
Photographic activities	5.35	5.77	6.57	6.37	8.06	8.03
Secretarial and translation activities	7.33	15.04	12.79	24.55	16.57	24.19
Activities of professional organizations	9.54	8.86	45.02	22.81	46.71	24.24
Motion picture and video production	6.41	8.25	8.92	13.62	24.52	16.98
Motion picture and video distribution	3.22	4.86	3.45	4.76	15.42	7.18
Motion picture projection	0.02	0.20	11.50	0.01	8.60	12.50
Radio and television activities	7.27	2.76	3.50	14.07	15.24	13.44
Artistic and literary creation and interpretation	15.90	20.85	29.86	26.84	61.12	22.85
Operation of arts facilities	0.00	0.00	0.00	36.51	16.01	14.18
Fair and amusement park activities	4.03	3.77	7.56	10.49	11.72	11.31
Other entertainment activities n.e.c.	4.36	6.23	4.24	13.95	16.25	15.51
News agency activities	7.61	7.04	5.23	16.82	12.90	7.92
Library and archive activities	0.55	3.18	51.45	28.09	17.56	27.67
Other recreational activities n.e.c.	2.65	4.78	5.47	15.38	15.15	9.43
Total	8.89	9.88	11.88	13.53	14.32	13.50

Profitability has been calculated in the form of a profit-to-turnover ratio.

Source: Romanian Chamber of Commerce and Industry database

Data from Table 4.2 led to some important conclusions regarding the profitability of core CI firms:

- their average profitability of 5.83 per cent in 2005 was satisfactory compared with other industries, which showed lower or even negative profit levels;
- for the whole period, there was a downward trend in average profitability from 8.90 per cent in 2000 to 5.83 per cent in 2005 which affected most of the component industries. This is because, as the number of firms increased, competition also increased, so profitability fell owing to price cuts and higher levels of demand satisfaction;
- higher profitability levels compared with average components (5.83 per cent) were recorded in 2005 by the following industries:
 - secretarial and translation activities: 10.44 per cent against 7.33 per cent in 2002;
 - artistic and literary creation and interpretation: 9.80 per cent against 15.90 per cent;
 - printing n.e.c.: 8.26 per cent against 19.09 per cent;
 - database activities: 8.14 per cent against 15.10 per cent;

- motion picture and video production: 7.33 per cent against 6.41 per cent;
- data processing: 7.25 per cent against 15.93 per cent;
- bookbinding: 7.15 per cent against 4.10 per cent;
- other software consultancy and supply: 7.12 per cent against 10.83 per cent;
- sound recording reproduction: 7.01 per cent against 8.00 per cent;
- software publishing: 6.90 per cent against 13.65 per cent;
- pre-press activities: 6.85 per cent against 5.08 per cent;
- Other entertainment activities n.e.c: 6.69 per cent against 4.36 per cent;
- manufacture of television and radio receivers, sound or video recording or reproduction apparatus and associated goods: 6.38 per cent against 7.19 per cent;
- book publishing: 6.25 per cent against 7.97 per cent;
- operation of arts facilities: 6.12 per cent against 0 per cent;
- other publishing: 6.08 per cent against 5.16 per cent.

Several core industries improved their profitability, achieving higher levels than the national average (e.g. secretarial activities, other entertainment activities, printing n.e.c).

The steepest profitability declines were recorded by data processing (-8.68 per cent), printing n.e.c (-8.26 per cent), database activities (-6.96 per cent), software publishing (-6.75 per cent), secretarial and translation activities (-6.16 per cent), other software consultancy and supply (-3.71 per cent) and book publishing (-1.72 per cent).

Increases in profitability throughout the period were recorded for: bookbinding (+3.05 per cent), other entertainment activities n.e.c. (+2.33 per cent) and operation of arts facilities (+1.77 per cent).

The profitability of the following core industries was lower than their average in 2005:

- publishing of sound recordings: 5.38 per cent against 1.73 per cent in 2002;
- fair and amusement park activities: 4.88 per cent against 4.03 per cent;
- publishing of journals and periodicals: 4.60 per cent against 5.13 per cent;
- ancillary activities related to printing: 4.28 per cent against 7.59 per cent;
- advertising: 4.25 per cent against 2.98 per cent;
- other recreational activities n.e.c: 4.07 per cent against 2.65 per cent;
- photographic activities: 3.47 per cent against 5.95 per cent;
- motion picture and video distribution: 3.10 per cent against 3.22 per cent;
- newspaper publishing: 2.51 per cent against 6.47 per cent;
- printing of newspapers: 2.08 per cent against 4.91 per cent;
- reproduction of video recordings: 0.26 per cent against 3.94 per cent.

It is worth mentioning that, while companies involved in the production and use of software and other IT facilities are generally more profitable than the average core CIs, their profitability fell in 2005 compared with 2000, when the indicator was excessively high owing to high initial demand and large numbers of powerful quasi-monopoly positions.

As the number of core CI firms increased, their profitability decreased on account of the stronger competition, increased demand satisfaction and a more rigorous application of IP law in Romania.

Most of the core industries experienced sharp drops in profitability, although several did in fact record profit rises:

- Other recreational activities: 1.5 times
- Other entertainment activities: 1.5 times
- Fair and amusement park activities: 1.2 times
- Motion picture projection: 10 times
- Secretarial and translation activities: 1.4 times
- Advertising: 1.4 times
- Pre-press activities: 1.3 times
- Bookbinding: 1.7 times
- Other publishing: 1.2 times
- Publishing of sound recordings: 3.1 times

The following industries recorded rising profitability between 2000 and 2005 and higher profitability than the average of total core CIs in 2005: secretarial and translation activities; bookbinding; other publishing; other entertainment activities; pre-press activities.

Still on the subject of the evolution of profitability, the significant fluctuation noted for almost all component industries shows how volatile and sensitive the sector is in this respect and highlights the ability of core industries to keep the indicator high in comparison with the national average.

4.2 Structure, Volume and Evolution of Gross Value Added (GVA)

At the beginning of Chapter 4, the share of core CIs in total national gross output, GVA and employment was given, to show that it increased in the period from 2002 to 2005 and to underline the steady rise in the contribution of those industries at the micro and macroeconomic levels and their important potential for growth in the medium and long terms.

In this study, we preferred to calculate GVA using the production method (cost of personnel, depreciation, profit, taxes; fewer subsidies), as this method is the best way of avoiding double counting.

The structure of core CIs

The following industries contributed the most to the generation of core industry GVA in 2005:

- Radio and television activities: 21.2 per cent
- Photographic activities: 14.03 per cent
- Printing n.e.c.: 14.0 per cent
- Other software consultancy and supply: 13.6 per cent
- Software publishing: 13.4 per cent
- Book publishing: 4.5 per cent
- Newspaper publishing: 3.1 per cent

The core CIs cover heterogeneous cultural and creative fields characterized by activities and products protected by copyright. Among them, the greatest contributions came from software, radio and television activities, publishing and printing and photography. These components all have the common feature of requiring protection by IP laws and regulations, while their economic value depends on the extent of their dissemination and due compliance with legal provisions.

The common feature of core CIs is their vocation for interdependence, their spillover (cross-sectional) connections with other Romanian industries, to which they supply copyright services and goods protected

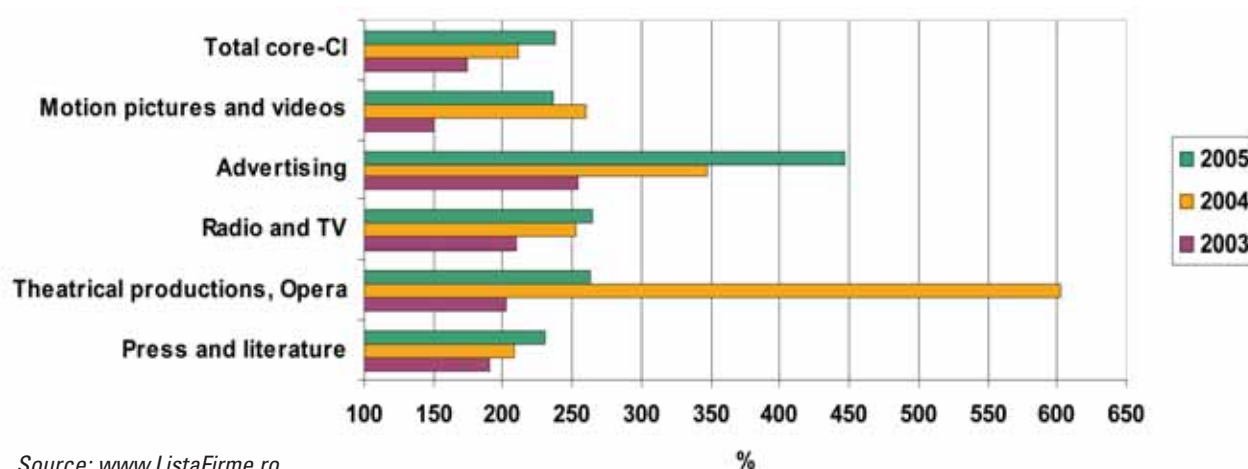
by IP laws, making intangible assets into the most important source of income and profitability for practically all socio-economic activities.

The change in GVA

The component industries of the core CIs recorded positive annual average growth rates, albeit with important fluctuations, from 2002 to 2005.

A significant increase was noted in advertising, radio and television and theater activities, particularly in 2004.

Graph 4.1. Dynamic of Core CI GVA, by Main Components (2002=100)



Source: www.ListaFirme.ro

In a more aggregated classification than that in Table 4.2, we notice that component industries with higher growth than the core CI average (33.64 per cent) were motion picture projection (347.92 per cent), publishing of journals and periodicals (168.32 per cent), newspaper publishing (112.68 per cent), publishing of sound recordings (167.58 per cent), book publishing (76.21 per cent), other publishing (74.43 per cent), advertising (64.65 per cent), artistic and literary creation and interpretation (60.93 per cent), printing n.e.c. (41.60 per cent) and radio and television (38.20 per cent).

Even the other components, however, those under the average dynamic of core CI, still recorded high values compared with the value added dynamic of the total economy, which was three times lower than that of total core activities.

GVA evolution, analyzed using chain indices, also revealed intense fluctuation, confirming the relatively unstable character of the sector, which is more sensitive to business and the influence of other specific factors.

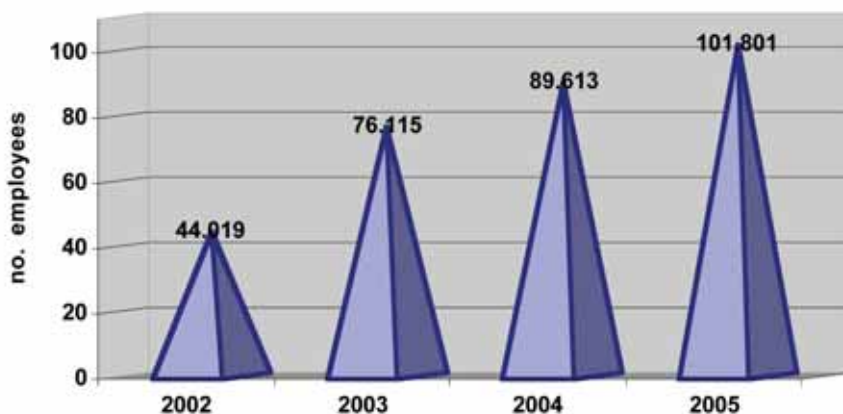
Analysis of core CI turnover in terms of structure, volume and dynamics generally shows the same characteristics as the analysis of GVA.

It will be noted that the turnover value of software and database-related activities is growing closer to that of press and literature. It is followed by advertising activities and only then by radio and television. The very low, almost insignificant contribution of the other activities, such as theater and movie production, etc. was very noticeable.

4.3 Employment in Core Copyright Industries

As indicated in the previous Chapter, core CIs made a smaller contribution to the national economy in terms of employment, namely just 2.34 per cent in 2005, with an even lower figure, 1.14 per cent, in 2002.. The change in the employment percentage does however reveal the important absorption potential of the sector. In absolute terms, the average number of employees in core copyright industries rose from 44,019 in 2002 to 101,801 in 2005, an increase of more than 100 per cent.

Graph 4.2. Change in Average Number of Employees in Core CIs



Source: www.ListaFirme.ro

In 2005, core component industries showed the highest level of employment (see Table 4.3) as follows:

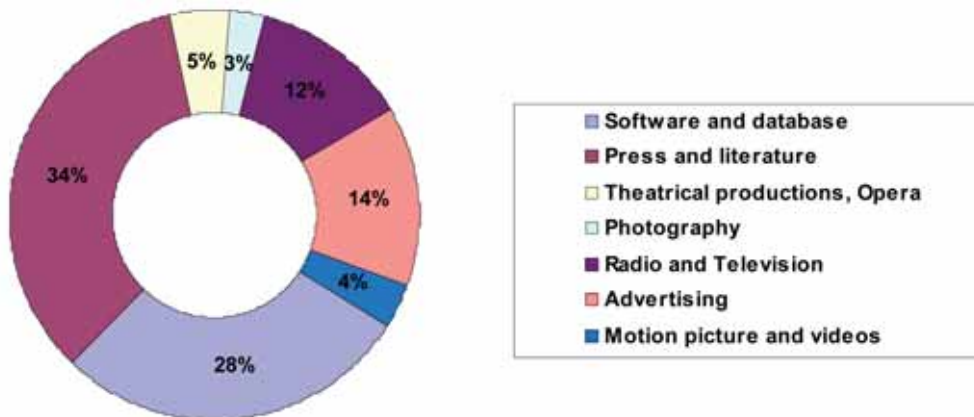
- Printing n.e.c.: 15,013 employees (14.75 per cent of total)
- Advertising: 14,617 employees (14.36 per cent)
- Radio and television activities: 12,486 employees (12.27 per cent)
- Software publishing: 12,409 employees (12.19 per cent)
- Other software consultancy and supply: 12,356 employees (12.14 per cent)
- Newspaper publishing: 5,949 employees (5.84 per cent)
- Book publishing: 4,871 employees (4.78 per cent)

The highest numbers of employees were found in printing, advertising, press and literature, software and database and radio and television.

An important feature of employees in core CIs is the creativity of the labor force, in the sense of their having the ability to create something new and combining scientific, technological, economic and artistic dimensions in their activities. Specialists⁸ therefore use the term "creative class" and propose a "creativity index" at both global and local levels. As an essential element of core CIs, creativity plays an important role in global competition and is fostered by exchanges of experience, information and skills that lead to national and international cooperation, propagation and spillover effects. Cultural creative industries account for an important share of self-employed workers and freelancers such as writers, visual artists, musicians, craft workers, designers, etc. working on a project-by-project basis, which offers more flexible opportunities in a fluctuating market .

⁸ See: Florida Richard, *The Rise of the Creative Class*, 2003; *Means of Overall Assessment of Cultural Life and Measuring the Involvement of Cultural Sector in the Information Society*, Report prepared by Robert Picard, Mikko Grönlund, Timo Toivonen, for the Finnish Ministry of Education and Culture, 2003, Finland; Hong Kong: Culture and Creativity, 2006

Graph 4.3. Structure of Labor by Components of Core CIs in 2005



Source: www.ListaFirme.ro

A large percentage of core component industries increased their levels of employment substantially between 2002 and 2005, which is explained by the initially low level of development of the industry concerned, but also by the diversification of core CI production and the fact that the intangible economy has become more and more important.

The highest growth rates were recorded in advertising, theater and opera and press and literature.

Graph 4.3. Average Number of Employees and Their Structure by Component Industries of Core CIs, 2002-2005

Industry	2002	2003	2004	2005
Book publishing	813	4.184	4.816	4.871
Newspaper publishing	796	5.440	6.633	5.949
Publishing of journals and periodicals	172	2.002	1.943	2.381
Publishing of sound recordings	33	152	227	448
Other publishing	118	329	518	524
Printing of newspapers	2.120	2.882	2.903	2.921
Printing n.e.c.	9.304	12.435	13.076	15.013
Bookbinding	440	603	502	616
Pre-press activities	234	342	452	510
Ancillary activities related to printing	343	823	880	802
Reproduction of sound recording	271	424	396	419
Reproduction of video recording	17	48	108	146
Manufacture of television and radio receivers, sound or video recordings or reproduction apparatus, and associated goods	17	84	75	86
Software publishing	10.571	7.487	9.375	12.409
Other software consultancy and supply	0	6.006	9.298	12.356
Data processing	1.362	2.184	2.848	3.115
Database activities	241	484	656	720
Advertising	3.774	8.644	12.014	14.617
Photographic activities	2.381	2.608	2.886	2.904
Secretarial and translation activities	627	0	0	0
Motion picture and video production	1.489	2.467	2.301	2.827
Motion picture and video distribution	71	1.048	288	170
Motion picture projection	29	39	681	599
Radio and television activities	6.150	12.061	12.474	12.486
Artistic and literary creation and interpretation	322	634	875	1.302
Operation of arts facilities	193	3	332	28
Fair and amusement park activities	323	291	282	332
Other entertainment activities n.e.c.	0	278	460	569
Other recreational activities n.e.c.	992	1.363	1.622	1.808
Total Core CIs	44,019	76,115	89,613	101,808
Total National	3,800,031	4,091,236	4,138,986	4,310,742
Core/National (%)	1.14	1.84	2.15	2.34

Source: Ministry of Finance

4.4 Total and Average Wage

In 2005, the total value of wages earned by employees in the core CIs was 3.49 per cent of that of wages in the national economy, compared with 1.81 per cent in 2002. The figure showed an upward trend throughout the period, which was found to be the result of both a more rapid increase in the number of employees and the growth of wages especially for highly-qualified personnel in the creative industries.

Five component core industries, namely software publishing, other software consultancy and supply, advertising and radio and television activities, contribute 77 per cent of the total wage value of core CIs, which reflects an uneven distribution of wages among those industries. Generally, in those auxiliary activities, employees are more highly skilled and better paid. The proportion of educated workers with at least a university degree, especially in the branches relating to the arts, is significant and increasing, in the opinion of specialists. Those workers are a valuable intangible asset for firms which create and profitably use new high technology in a competitive, globalized context. However, only a small proportion of core-industry employees will be successful in earning a living from creation, innovation and art.

We did not have reliable statistical data and information concerning the characteristics of the core labor force with respect to job stability (permanent and temporary workers, workers with or without second jobs, gender, age, regional peculiarities, etc.). However, our discussions and interviews with managers and specialists in core firms revealed that it is typical for many employees to have more than one job, especially in the field of art and the performing arts, where full-time contracts and permanent occupations are unusual, with workers being hired under part-time contracts or for a limited time.

The average monthly wage in core CIs in 2005 was 307 euros a month, 1.5 times higher than the national average. In 2002 to 2005 there was a slight closing of the gap between the monthly wages paid in some core copyright industries and the national average. This is explained by the faster growth of the national average wage in comparison with those in its branches.

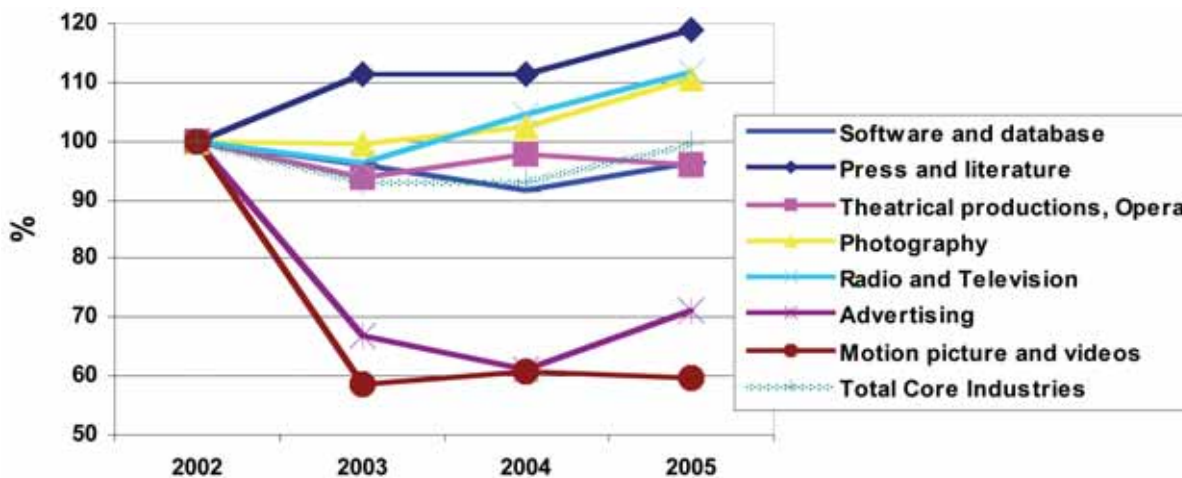
The core industries that showed the highest average monthly wage in 2005 were radio and television activities (551 euros), software publishing (470 euros), newspaper publishing (335 euros), publishing of journals and periodicals (332 euros) and software consultancy and supply (408 euros). All these cultural-creative activities were performed by university-educated people, who are badly needed in the Romanian labor market, where demand exceeds supply.

The lowest monthly wages were recorded in 2005 for six component industries, operation of art facilities, other entertainment activities, bookbinding, fair and amusement park activities, artistic and literary creation and interpretation and other recreational activities n.e.c.

Wages in those core industry activities were lower either because a high level of skills is not required or because they are classified as "low" in terms of creativity or innovation.

The real average monthly salary was constant from 2002 to 2005 for core CIs as a whole, with some fluctuation in a number of component industries (Graph 4.4).

Graph 4.4. Change in Real Salary for Several Components and Total Core CIs (2002=100)



Source: www.ListaFirme.ro

4.5 Gross Value Added Economic Components

Core industries are characterized by the specific structural features of the value added (i.e. wages, depreciation, gross profit and taxes) compared with the structure of the national GVA. Those features can serve as benchmarks for decision-making strategies and the substantiation of core industry action plans. By comparing the value added structures (personal expenses, depreciation, gross profit and taxes) of core industries with those at the national level (Table 4.4), we find the following:

- wages contribute the most; for core CIs the share is smaller than that of the national economy;
- the gross profit share in the value added of core industries is greater than in the national economy, which testifies to the relatively high profitability of the industry and also its attractiveness to investors;
- while the share of wages shows a slight downward tendency, the gross profit share has tended to move upwards, from 40.76 per cent in 2002 to 46.31 per cent in 2004;

Table 4.4. Core GVA Compared with National GVA (%) (Total GVA = 100%)

Value added Components	Years							
	2002		2003		2004		2005	
	Core	National economy	Core	National economy	Core	National economy	Core	National economy
Personal expenses	41.99	49.12	39.58	45.50	37.34	41.09	40.49	42.00
Depreciation	12.88	14.18	13.27	14.36	12.67	15.96	14.68	16.29
Gross profit	40.76	26.39	43.04	31.09	46.31	35.44	40.68	33.70
Taxes	4.36	10.30	4.12	9.05	3.68	7.51	4.16	8.01

Source: Ministry of Finance

- the depreciation and share of tax components of core CI GVA showed a slight upward trend;
- in comparison with the national level, the depreciation and share of tax components of core industry value added were small, because some benefited from tax reductions (i.e. software and database) or had relatively few fixed assets.

Analysis of the personnel costs and profit share elements of gross value added for the principal components of six core industries reveals their individual approaches to wage policy and their contribution to the State budget. It also shows their development potential, in that part of their gross profits are reinvested. We mention the high wages in the software publishing industry because of the good qualifications and the creativity of its workforce.

The lowest wage component in total value added in 2005 was in advertising (27.96 per cent) and printing n.e.c. (33.22 per cent).

In the same year, the greatest share of gross profit in value added was in the book publishing industry (57.23 per cent) and printing n.e.c. (52.70 per cent).

The contribution of the 29 core CIs in each category of value added economic variables from 2002 to 2005 revealed that the following industries had the greatest shares in the structure of GVA (personal expenses, depreciation, gross profit, taxes): radio and television (21.32 per cent of the total value added of the core industries in 2005); advertising (14.09 per cent); printing n.e.c. (14.08 per cent); software publishing (13.50 per cent); other software consultancy and supply (13.64 per cent).

Software, programming and consultancy industries based on information and communication technologies (ICT) are the activities that make the greatest contribution to the total value added of the core CI sector (27.14 per cent). Experts argue that ICT has revolutionized the economy and society as a whole as well as CIs with respect to the production and dissemination of this subject matter and the protection of intellectual property.

4.6 Productivity and Profitability of Core Copyright Industries

Labor productivity

As a developing country, Romania is interested in catching up on labor productivity, which is an important indicator of the national economy's level of competition.

A labor productivity analysis is an opportunity to see how the core CIs can contribute to the strategic goal of narrowing the gaps between Romania and more developed economies.

In spite of certain statistical difficulties faced in carrying out the study, we calculated the annual amount of value added to one employee as the labor productivity indicator in core industries, in order to see what activities are more or less productive in a comparison between CIs and the national level. This indicator has to be calculated with the "return on investment" indicator in order to gain a more comprehensive idea of the efficiency of the main production factors in the industries concerned. Unfortunately the data on investment are missing, so the only indicator used was labor productivity.

In the core CIs, labor productivity was greater than in the national economy, and it recorded a higher rate of growth.

Our study of the evolution of labor productivity in the core industries reveals the following:

- productivity in the core CI sector was 51.07 per cent above the national average;
- the productivity gap between core CIs and the national average was reduced from 70.56 per cent to 51.07 per cent, which denotes a convergence of productivity levels between them and other Romanian industries.

In 2005, industries with a higher level of labor productivity compared with the average for core CIs (11,917 euros GVA per employee) were the following:

- Radio and television: 1.72 times;
- Other software consultancy and supply: 1.11 times;
- Software publishing: 1.10 times;
- Printing of newspapers: 1.07 times;
- Manufacture of television and radio receivers, sound or video recordings or reproduction apparatus, and associated goods: 1.05 times.

The highest levels of GVA per employee were recorded in the radio, television and software industries and also in the database sector, which sometimes provided higher returns on investment in creativity and copyright.

Investment in core CIs (especially software, printing, etc.) generated more wealth than investment in other, non-core industries (equipment or paper manufacturing).

In 2005, compared with 2002, there was a noticeable decline in labor productivity in the following industries: operation of arts facilities; reproduction of video recordings; manufacture of television and radio receivers; sound or video recording or reproduction apparatus and associated goods; printing of newspapers; database activities; book publishing.

Profitability

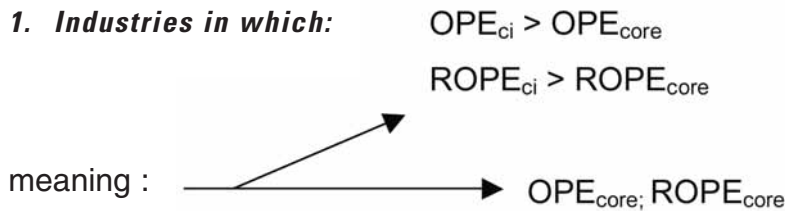
The profitability of the core industries was measured as a profit-to-employee ratio, which in our opinion is a relevant indicator of the development capacity of an industry.

The profitability analysis of the core CI sector shows that the average operational profit per employee at the national level was 2,735 euros in 2005, while in the core CIs the figure was 4,890 euros; this confirms that the core industries are a dynamic and complex economic sector characterized by relatively high profitability, which is one of the upward-driving forces in economic development.

There are wide differences among the core component industries regarding the value of the operational profit per employee indicator and its evolution in time.

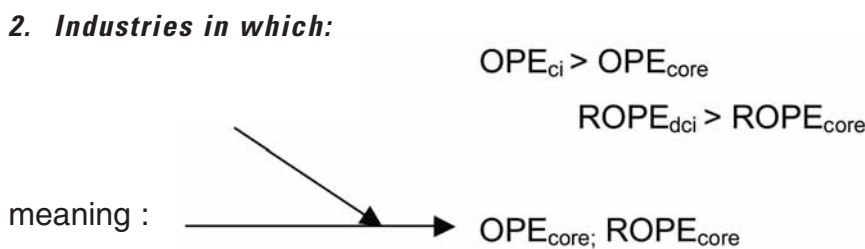
Our analysis of the core CIs with regard to the size and evolution of their operational profit per employee, both overall and at component industry level, led us to an interesting and useful classification of the core industries which could be helpful for better decision-making and policymaking in the copyright industries. This classification aims to establish a typology of core industry components and is based on two economic criteria: the level of profitability indicators for the core industry and its components on the one hand and on the other the dynamics (growth rate) of profitability for the core industry and its components over the period from 2002 to 2005.

By correlating the size indicators with the dynamic indicators of operational profit per employee, both for all core CIs and for their component industries, we can distinguish the following category of core industries:



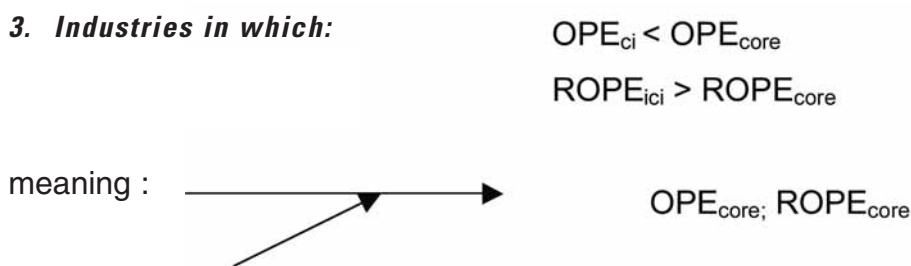
Industries that are highly profitable are showing an upward trend, because both the size and rate of the profit per employee is overtaking the core level average. In our research those categories included book publishing and artistic and literary creation and interpretation.

The strategies adopted for these core industries should aim to increase further or maintain the relative advantage of investing in creativity and dissemination of knowledge and art.



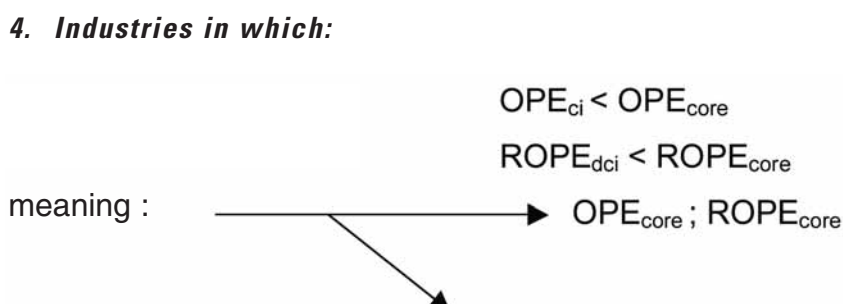
Highly profitable industries, albeit in decline, are printing of newspapers, manufacture of television and radio receivers and other software consultancy and supply.

The policy strategy goal for these industries is to stop the decline and restart growth.



Low-efficiency industries represented by bookbinding; radio and television activities, other entertainment activities n.e.c and other recreational activities n.e.c.

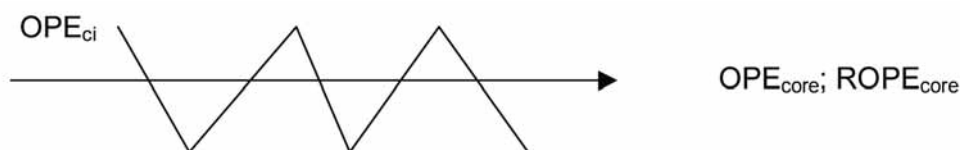
These industries need to focus their future efforts on increasing their growth rate in order to close the gap and surpass the average profitability level of the core industry.



Low-profitability industries that are in decline are newspaper publishing, other publishing, data processing and photographic activities.

Any increase in the profitability of these activities depends to a great extent on demand and also technological change.

5. Industries with a fluctuating evolution of OPE_{ci} and $ROPE_{ci}$ compared with OPE_{core} and $ROPE_{core}$, meaning:



The industries that show efficiency variations in the core CI sector as a whole are publishing of journals and periodicals, publishing of sound recordings, pre-press activities, software publishing, database activities, motion picture and video distribution, artistic and literary creation and interpretation and operation of arts facilities.

Those industries are the main contributors to the average level of profitability of the entire core industry.

6. Industries making a sensitive profitability “leap” were printing n.e.c, advertising and motion picture and video production.

7. Profitable industries in decline are the reproduction of sound recordings on the one hand and of video recordings on the other; their further development is closely tied up with technological improvements. In our view, each core category from the proposed typology requires specific strategic approaches, policies and action programs if it is to retain or improve its economic, financial and socio-cultural performance.

4.7 Contribution of Core Copyright Industries to International Trade

The contribution of the core industries to Romanian exports and imports is a particular economic issue: it has to do with the necessity of export promotion and also with the goal of maintaining the balance of payments and the current account deficit at sustainable levels. For their part CI imports are a prevailing creative and disseminating factor impacting on both cultural or social-educational values and the latest scientific knowledge. Globalization, along with the growing international interdependence of countries in economic, scientific and environmental terms, represents a boost to foreign trade for copyright works and related activities.

Exports

The core CIs recorded export growth ranging from 23.5 million euros to 55.6 million euros between 2000 and 2005 (Table 4.9). This rate might seem very dynamic, but the total volume of exports remains relatively modest if one considers the size and potential of Romania.

The share of core CIs in the total national exports grew from 0.16 per cent in 2002 to 0.24 per cent in 2005, and yet the core CI export share is very small compared with other countries, as are exports per capita. For Romania the “convergence” process in this area is a further challenge given the average level of exports in the 27-country EU (EU-27), which is much higher than in Romania.

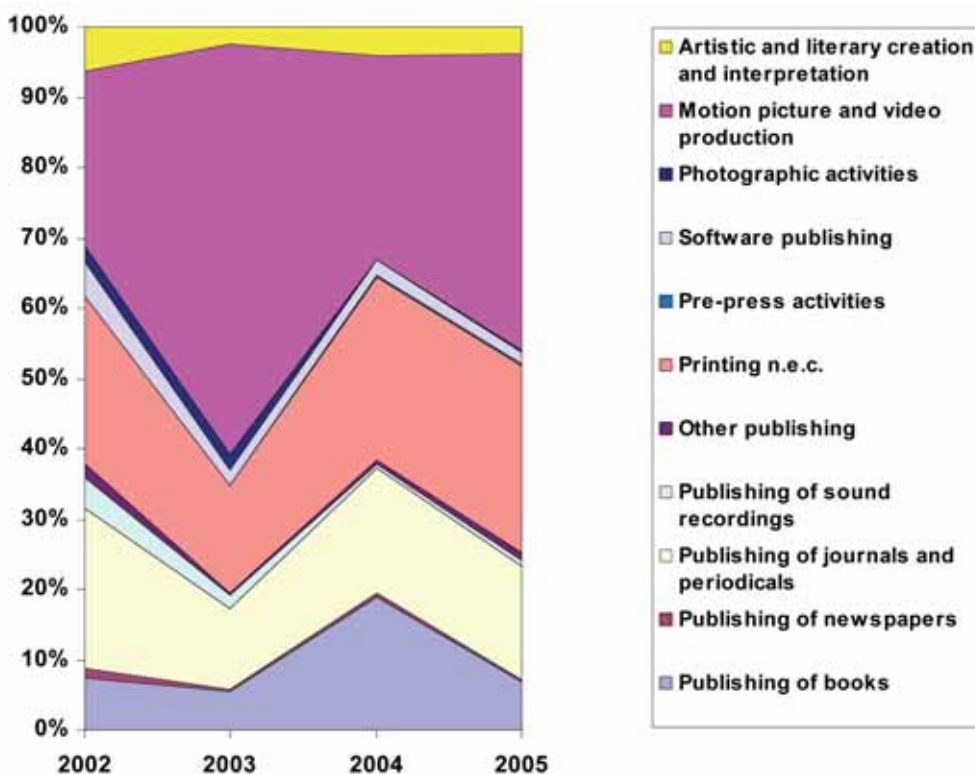
The highest export shares among core CIs in 2005 were in motion picture and video production (42.23 per cent of total core CI exports in 2005), other publishing (26.67 per cent), publishing of journals and periodicals (16.08 per cent) and book publishing (6.74 per cent).

Table 4.5. Volume Value of Core CI Industry Exports, 2002-2005 (in euros)

Industry	2002	2003	2004	2005
Book publishing	1,768,984	2,385,197	6,993,637	3,548,524
Newspaper publishing	315,481	130,834	143,919	171,896
Publishing of journals and periodicals	5,343,419	5,110,677	6,516,712	8,463,616
Publishing of sound recordings	1,001,075	746,185	205,125	539,993
Other publishing	469,957	203,257	200,129	515,106
Printing n.e.c.	5,573,600	6,666,499	9,586,023	14,038,060
Pre-press activities	54,643	39,242	105,533	118,108
Software publishing	1,156,589	1,005,238	785,112	831,342
Photographic activities	521,863	957,064	69,226	117,092
Motion picture and video production	5,842,044	25,597,145	10,678,822	22,229,281
Artistic and literary creation and interpretation	1,480,532	1,097,024	1,484,224	2,059,964
Total	23,528,187	43,938,362	36,768,462	52,632,982
Core Share in Total Exports (%)	0.16	0.28	0.19	0.24

Source: NIS database

Graph 4.5. Export Structure of Core CIs, 2002-2005 (%)



Source: NIS database

The core industries with the most dynamic exports during the period analyzed were motion picture and video production (a growth rate of 3.8), printing n.e.c. (2.5) pre-press activities (2.2) and publishing of journals and periodicals (1.6).

The level of exports during the period analyzed decreased by 20 per cent for photographic activities, by more than 50 per cent for newspaper publishing and publishing of sound recordings and by more than 33 per cent in software publishing, which is symptomatic of the weak external competitiveness of these industries.

In each core CI activity, strong export variations were noticeable for copyright goods and services from one year to the next owing to a multitude of internal and external factors and also their only moderate competitiveness.

Imports

Core CI imports grew faster than exports from 2002 to 2005, reaching 117.3 million euros in 2005, compared with 76.5 million euros in 2002 (a growth rate of more than 2.3).

Table 4.6. Value Volume of Core CI Imports, 2002-2005 (in euros)

Industry	2002	2003	2004	2005
Book publishing	18,844,470	16,776,475	20,982,073	21,713,682
Newspaper publishing	233,671	427,349	314,810	27,318
Publishing of journals and periodicals	4,723,058	4,774,906	5,129,463	5,445,879
Publishing of sound recordings	2,639,291	2,178,087	2,995,743	2,469,767
Other publishing	5,337,302	5,626,326	7,043,793	7,142,923
Printing n.e.c.	32,657,354	35,453,228	44,338,502	60,038,217
Pre-press activities	2,419,528	2,208,613	2,533,542	2,933,900
Software publishing	1,146,016	3,213,032	5,345,820	6,576,580
Photographic activities	200,059	393,733	579,251	849,727
Motion picture and video production	7,991,294	30,270,791	48,076,831	69,549,638
Artistic and literary creation and interpretation	345,727	346,710	547,569	604,281
Total	76,537,770	101,669,250	137,887,397	177,351,912
Core Share in Total Imports (%)	0.41	0.48	0.52	0.54

Source: NIS database

The core industries that made a higher contribution to the total volume of core CI imports were motion picture and video production, with an increased share in total imports from 10.44 per cent in 2002 to 39.22 per cent in 2005, printing n.e.c, despite a decrease from 42.67 per cent to 33.85 per cent, software publishing, with an increase from 1.50 per cent to 3.71 per cent, and book publishing, with a decrease from 24.62 per cent to 12.24 per cent.

Trade Balance of Copyright-Based Goods

As a result of higher imports over exports, core CIs recorded a growing annual trade balance deficit (Table 4.7), thereby adding to the current account deficit and the growth of external debt in both the medium and the long term.

Table 4.7. International Trade Balance for Core Copyright ('000'000 euros)

Industry	2002	2003	2004	2005
Book publishing	-17.08	-14.39	-13.99	-18.17
Newspaper publishing	0.08	-0.30	-0.17	0.14
Publishing of journals and periodicals	0.62	0.34	1.39	3.02
Publishing of sound recordings	-1.64	-1.43	-2.79	-1.93
Other publishing	-4.87	-5.42	-6.84	-6.63
Printing n.e.c.	-27.08	-28.79	-34.75	-46.00
Pre-press activities	-2.36	-2.17	-2.43	-2.82
Software publishing	0.01	-2.21	-4.56	-5.75
Photographic activities	0.32	0.56	-0.51	-0.73
Motion picture and video production	-2.15	-4.67	-37.40	-47.32
Artistic and literary creation and interpretation	1.13	0.75	0.94	1.46
Total	-53.01	-57.73	-101.12	-124.72

Source: NIS database

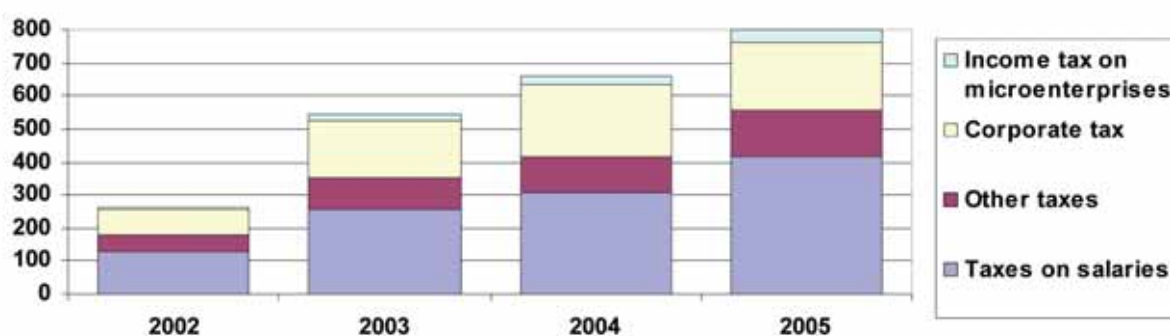
The core industries that most aggravated the trade balance deficit were motion picture and video production (37.9 per cent in 2005), printing n.e.c. (36.9 per cent) and book publishing (14.6 per cent). The only core industries that recorded a minimal trade surplus were publishing of journals and periodicals (3.02 million euros), artistic and literary creation and interpretation (1.46 million) and newspaper publishing (0.14 million).

Romania has been a net importer of copyright goods, especially as a result of EU accession and the growing influence of information and communication technology, which makes for greater national participation in the globalization of the cultural and artistic markets.

4.8 Tax Contributions of Core Copyright Industries

Core industries also contribute to Romanian economic and social development through taxes, which constitute State income.

Graph 4.6. Taxes Paid by Core CI Companies, 2002-2005



Source: Ministry of Finance

From 2002 to 2005, the contribution of core CIs to the State budget grew from 1.5 per cent to 2.82 per cent. The most important industries among the total core CIs in this respect in 2005 were radio and television activities (25.70 per cent of total), software publishing (13.52 per cent), printing n.e.c. (13.32 per cent), other software consultancy and supply (12.76 per cent) and advertising (12.72 per cent).

Taxes for total core industries increased 2.15 times compared with a growth rate of 1.14 times at the national level. The highest average annual rates of tax growth were recorded for artistic and literary creation and interpretation, radio and television and the data processing industry.

The tax structure in 2005 showed that taxes on wages and corporation tax took the greatest amount for most of the component industries, with averages of 51.82 per cent and 25.41 per cent respectively. Analysis of the tax structure for total core CIs shows that there were no significant changes throughout the period from 2002 to 2005.

Chapter 5 Economic Contribution of the Non-Core Copyright Industries

5.1. Economic Contribution of the Interdependent Copyright Industries

According to WIPO, the interdependent copyright industries (ICIs) are those sectors and activities engaged in the production, manufacture and sale of equipment to facilitate, wholly or primarily, the creation and production or use of works and other protected subject matter (WIPO Guide, p. 33).

In the case of Romania, these industries were identified through cooperation with specialists from WIPO in Geneva, and an estimate of the share of their economic contribution ("the copyright factor") was made using several information sources, such as:

- data from questionnaires sent to managers of around 100 representative companies in this field;
- specialized literature from other countries that have carried out similar studies in which they dealt with the matter of the copyright factor (Hungary, Singapore, the United States and others.);
- interviews with specialists from various public and private institutions involved in the copyright sector.

The interdependent industries selected for this study are presented in the methodology; they include the manufacture of television receivers, radios, and DVD players, the manufacture of electronic equipment and computers, musical instruments and photographic material and the manufacture of photocopying and other reprographic machines.

Usually ICIs are divided into two main groups, core interdependent and partly interdependent, according to the degree and nature of their complementarity and interaction (cross-sectional correlation) with the core copyright industries.

Core interdependent copyright industries are concerned with television and radio receivers, VCRs, cassette, CD and DVD players, electronic game consoles and other similar equipment; computers and peripherals and musical instruments.

The components of this group are essentially support industries for copyright goods and services and so depend on the existence of copyright works.

Partial interdependent copyright industries relate to paper, photographic and cinematographic instruments, photocopiers and blank recording material.

They are less dependent on core industries to facilitate their activities; indeed those activities are not primarily connected with core industries, as most of them relate to the consumer durables sector. Each ICI component was analyzed, using differentiated copyright factors, in relation to the main indicators for core industries.

5.1.1 Gross Value Added

The calculated GVA of ICIs reflects their share in direct relation to the operation of CIs, and not to the overall activities of the industries concerned.

In the period analyzed, we noticed a relatively constant proportion of GVA in the total nationally adjusted GDP (0.96 per cent - 1.08 per cent), with the exception of 2004, when the share decreased by almost 67 per cent on account of the weak performance of SMEs, which form the major part of the interdependent copyright industries. A number of tax advantages available to those enterprises in previous years were suspended in 2004, which was also an electoral year: this had a slight adverse effect on some CI areas. Compared with the share of core CIs in adjusted GDP, the ICI share is very small. The component industries that made the greatest economic contribution to the total value added of ICIs were telecommunications, manufacture of computers and other information-processing equipment, other computer-related activities, manufacture of radio and television receivers and sound or video recording or reproducing apparatus and associated goods.

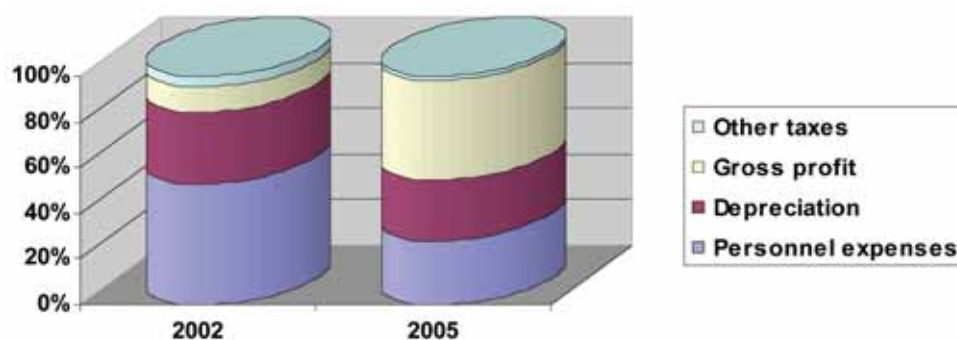
We noticed the important share of telecommunications in the total GVA of ICIs (78.46 per cent in 2005), which was followed by the manufacture of computers and other information processing equipment (6.37 per cent) and furniture manufacture (2.42 per cent).

Telecommunications and computers are industries based almost entirely on technology and the import of materials and spare parts, which are then assembled in Romania on account of the relatively low labor costs, ensuring a low GVA share and a competitive advantage for the country.

The share of GVA varies across ICI components from year to year. The share of personnel expenses of total ICIs in total GVA was 0.72 per cent in 2005, while the share of depreciation was 1.77 per cent and gross profit 1.38 per cent. The highest contributions were recorded by telecommunications.

Personnel costs and gross profits are the main components of the GVA of ICIs. In 2005 their shares were 28.2 per cent and 43.1 per cent respectively.

Graph 5.1. Structure of the GVA of ICIs with respect to Economic Components in 2002 and 2005



Source: Ministry of Finance

Analysis of the GVA structure of ICIs with respect to economic variables (personnel costs, depreciation, gross profit and taxes) reveals the following:

- the highest share (over two-thirds) was recorded in 2002 and 2005 by the cost of personnel in the telecommunications sector; this sector also made the greatest contribution to total taxes paid by ICIs (around 70 per cent);
- the structure of GVA in interdependent activities is different from one activity to another, depending on its components; on average the highest shares came from wages and gross profit;

- the average nominal monthly wage was highly different from one ICI to another, and the average activity level exceeded the national average in all years above this level, for instance in telecommunications, manufacture of television and radio receivers and manufacture of audio and video recording apparatus.

5.1.2 Employment

The average number of employees in ICIs increased from 17,733 in 2002 to 24,864 in 2005, representing an increase in the share of the total national number of employees from 0.47 per cent to 0.58 per cent (Table 5.1).

It can be seen that the average number of employees in telecommunications decreased dramatically in 2004 owing to the bankruptcy of a large number of SMEs, which in turn is explained by the elimination of tax benefits for this category of enterprise (although some of them were given back in 2005). The "brain drain" and "brain gain" phenomena also contributed to some extent to this variation in employment, with the adverse effect of the brain drain (or loss) mainly on industries relying on highly qualified personnel. In other interdependent industries (such as manufacture of paper and paperboard, manufacture of radio and television receivers and furniture manufacture) employment levels decreased in 2005 compared with 2004 as a result of less favorable economic conditions for the activities concerned, especially those engaged in international competition or those resulting from the privatization of State-owned enterprises, which were generally overstuffed and which, following privatization, suffered very sharp drops in employee numbers.

Table 5.1. Average Number of Employees in ICIs, 2002-2005

Industry	Years			
	2002	2003	2004	2005
Manufacture of paper and paperboard	1,973	1,644	1,368	958
Manufacture of other articles of paper and paperboard	140	202	192	181
Manufacture of computers and other information processing equipment	1,822	2,406	2,675	2,921
Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	449	446	416	335
Manufacture of chairs and seats	135	182	208	208
Manufacture of other office and shop furniture	364	599	717	796
Manufacture of other kitchen furniture	19	13	15	18
Manufacture of other furniture	1,519	2,160	2,250	2,130
Manufacture of musical instruments	801	1,022	1,081	805
Manufacture of games and toys	1,090	1,143	1,249	1,044
Telecommunications	8,294	5,744	2,887	10,871
Other computer-related activities	1,126	1,642	1,625	4,598
Total Interdependent	17,733	17,203	14,683	24,864
Total National	3,800,031	4,091,236	4,138,986	4,310,742
Interdependent/National (%)	0.47	0.42	0.35	0.58

Source: Ministry of Finance

Labor distribution by component industry revealed a concentration in the telecommunications sector (43.72 per cent), other related computer activities (18.49 per cent) and manufacture of computers and other information processing equipment (11.75 per cent).

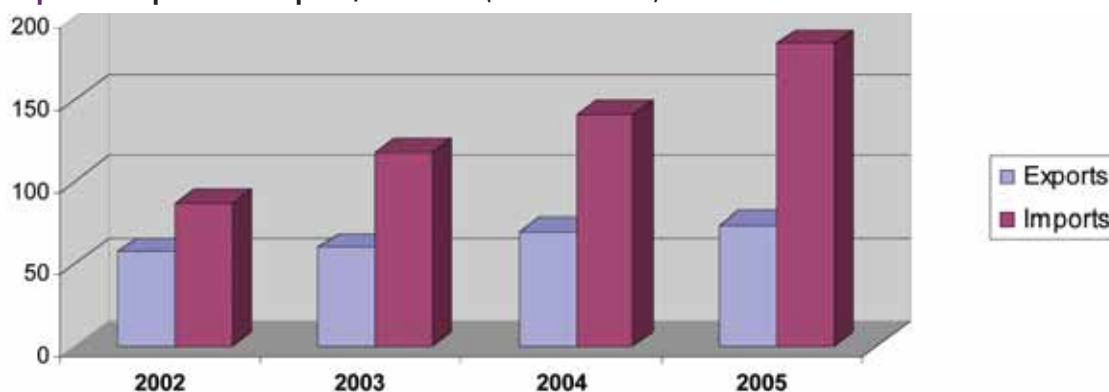
The operational profit per employee for ICIs was 2.2 times higher than in the national economy. Component industries showing levels of profit below the national average were manufacture of paper and paperboard, manufacture of other articles of paper and paperboard and manufacture of blank media. The highest salaries were paid in telecommunications and the manufacture of radio and television receivers.

The operational profits tended to fluctuate, both for overall ICIs and for most of the component industries (especially telecommunications).

5.1.3 International Trade

The economic contribution of ICIs to international trade was characterized by an increase in exports from 57.3 million euros in 2002 to 73.2 million euros in 2005, while imports recorded much higher increases, from 86.8 million euros in 2002 to 184.1 million euros in 2005.

Graph 5.2. Exports and Imports, 2002-2005 ('000'000 euros)



Source: Ministry of Finance

The share of the exports of ICIs in the total for Romania decreased from 0.39 per cent in 2002 to 0.33 per cent in 2005, while the share of imports increased from 0.46 per cent to 0.57 per cent, underlining the extent of dependency on imports. Exports were actually following an upward trend, yet with much slower growth than imports.

The highest export share was recorded in the manufacture of furniture (89.74 per cent of total ICI exports in 2002 and 92.14 per cent in 2005), while the highest import share was recorded for the manufacture of computers and other information processing equipment (40.3 per cent in 2005 compared with 43.0 per cent in 2002) and the manufacture of radio and television receivers (43.9 per cent in 2005 compared with 40.0 per cent in 2002).

Table 5.2. Trade Balance for ICIs (in euros at current prices)

Industry	2002	2003	2004	2005
Manufacture of paper and paperboard	-1,008	-1,344	-1,569	-2,186
Manufacture of other articles of paper and paperboard	-0,136	-0,151	-0,222	-0,271
Manufacture of photographic chemicals	-0,581	-0,637	-0,739	-0,736
Manufacture of prepared unrecorded media	-3,319	-5,004	-5,743	-6,561
Manufacture of computers and other information processing equipment	-37,256	-45,442	-53,309	-73,713
Manufacture of television and radio receivers etc.	-31,972	-51,248	-62,088	-79,194
Manufacture of chairs and seats	1,073	1,106	1,454	1,431
Manufacture of other office and shop furniture	-0,100	-0,100	-0,159	-0,192
Manufacture of other kitchen furniture	0,012	-0,039	-0,055	-0,119
Manufacture of other furniture	47,331	49,754	57,200	58,909
Manufacture of musical instruments	-0,314	-0,468	-0,514	-0,893
Manufacture of games and toys	-3,271	-3,598	-5,069	-7,496
Total Interdependent	-29,540	-57,171	-70,812	-111,021

Source: NIS

The deficit in the trade balance in the period from 2002 to 2005 increased by over 200 per cent, which reflected the continuing imbalance between ICI exports and imports. The highest contribution to the trade deficit was made by the manufacture of computers and other information-processing equipment, the manufacture of radio and television receivers and furniture manufacture.

The factors contributing to the increased imbalance between exports and imports were closely connected with the interdependent industries' need to increase their technological levels in response to international demand, as well as the need for diversification of domestic demand.

5.2 Economic Contribution of the Partial Copyright Industries

Partial copyright industries (partial CIs) are industries involved only partly in copyright-related activities. A certain proportion of the activity of these industries relates to works and other protected subject matter and involves creation, production and manufacture, performance, broadcasting, communication and exhibition or distribution and sale. They cover apparel, textiles, footwear, jewelry coins, furniture, household goods, china and glass, wall coverings and carpets, toys and games, architecture, engineering, surveying, interior design and museums.

The copyright factor was calculated on the basis on expert estimations and opinions; its values are presented in the methodology at the beginning of this study.

The approximate value of the copyright factor varies widely, especially regarding the contribution of CIs to employment, as the majority of employees do not have a direct connection with the production and/or distribution of copyright-protected goods.

Table 5.3. Economic Contribution of Partial CIs to the National Economy, 2002-2005

Indicators	2002	2003	2004	2005
Share in GVA	0.45	0.66	0.53	0.53
Share in employment	0.79	0.92	0.89	0.82
Share in exports	0.29	0.28	0.24	0.23
Share in imports	0.23	0.21	0.20	0.19

Source: NIS

The highest participation of partial CIs in the national economy was recorded for employment and GVA, which is explained by the following:

- partial industries are numerous and involve salaries and labor costs to a greater extent;
- as Romania is a net importer of copyright goods, all partial CIs are involved to some extent in those activities. It is accepted that an increasing share of the goods on the Romanian market are of foreign origin or produced and distributed subject to foreign copyright.

5.2.1 Gross Value Added

The following component industries contributed the most to total partial CI GVA: architecture and engineering activities and related technical consultancy (26.4 per cent), manufacture of clothes (over 25 per cent) and manufacture of footwear (16.5 per cent). These industries also played the most important role in terms of overall economic contribution.

When analyzed with reference to the CANE code, the greatest contribution was recorded in 2002 by the manufacture of other outerwear, while in 2005 that place was taken by architecture and engineering activities and related technical consultancy; the latter had a share increase of 2 per cent in 2005 compared with 2002.

Table 5.4. Structure of Partial CI GVA by Component Industry, 2002-2005

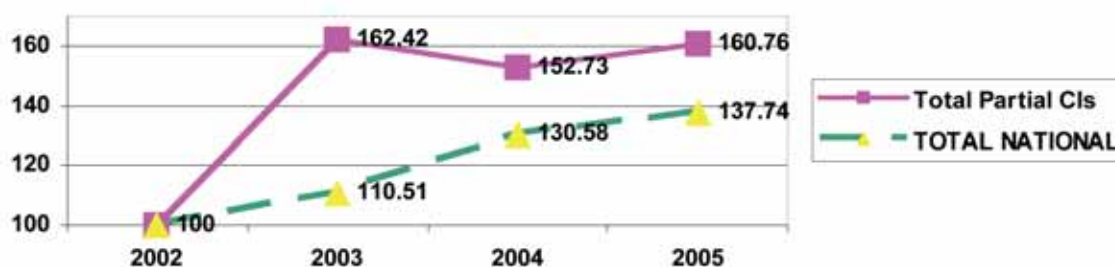
Industry	Years (%)			
	2002	2003	2004	2005
Manufacture of made-up textile articles, except apparel	0.97	0.72	0.65	1.07
Manufacture of carpets and rugs	0.24	0.10	0.09	0.10
Manufacture of other textiles n.e.c.	0.33	0.31	0.29	0.19
Manufacture of knitted and crocheted fabrics	0.18	0.17	0.26	0.26
Manufacture of knitted and crocheted hosiery	0.18	0.11	0.26	0.22
Manufacture of leather clothes	0.43	0.40	0.40	0.24
Manufacture of other outerwear	27.82	25.14	29.22	25.93
Manufacture of underwear	1.93	1.78	1.95	2.10
Dressing and dyeing of fur, manufacture of articles of fur	0.01	0.03	0.05	0.04
Manufacture of footwear	24.48	19.14	18.56	16.55
Shaping and processing of flat glass	0.38	0.37	0.47	0.58
Manufacture of hollow glass	6.66	7.19	6.20	4.64
Manufacture of ceramic household and ornamental articles	9.26	6.41	7.12	5.80
Manufacture of ceramic tiles and flags	0.89	0.82	1.46	6.90
Manufacture of cutlery	0.01	0.03	0.03	0.02
Striking of coins	0.78	0.52	0.44	0.48
Manufacture of jewelry and related articles n.e.c.	0.47	0.55	0.57	0.71
Architectural and engineering activities and related technical consultancy	24.68	31.98	24.95	26.53
Other services mainly delivered to enterprises	0.00	3.86	6.71	6.22
Activities of other membership organizations n.e.c.	0.02	0.09	0.11	1.08
Museum activities and preservation of historical sites and buildings	0.29	0.28	0.22	0.31
Total Partial CIs	100.00	100.00	100.00	100.00

Source: NIS

Some industries, such as the manufacture of footwear and glass and ceramics, showed a decreased share in the GVA of the total partial industries, while the manufacture of other clothing articles, architectural and engineering activities and related technical consultancy and other services delivered mainly to enterprises recorded an increase.

The evolution of the GVA of partial CIs was above to the national average, especially for component industries with important shares, but also for components with relatively low shares.

Graph 5.3. Change in Partial CI Gross Value Added, 2002-2005 (2002=100)



Source: NIS

Nine component industries recorded a higher average share than the partial CIs, and five experienced lower output in 2005 than in 2002 (manufacture of carpets, rugs and other fabrics, manufacture of leather clothing, striking of coins, museum activities and preservation of historical sites and buildings).

The structure of GVA, calculated according to income, reveals the importance of personnel costs and share of gross profit.

Significant differences were noticed within the component industries of partial CIs.

The analysis for 2002 revealed that personnel costs took the greatest share in GVA for the manufacture of knitted and crocheted fabrics (80.85 per cent), while the smallest share went to other membership activities n.e.c (15.55 per cent). As regards depreciation and gross profit, the greatest and smallest contributions to the formation of GVA of partial CIs were made by:

- depreciation for news agency activities (13.87 per cent) and striking of coins (3.60 per cent);
- gross profit for library and archive activities (68.75 per cent) and manufacture of knitted and crocheted fabrics (10.31 per cent).

In 2005 the situation changed significantly regarding not only industries with extreme values for their contribution to GVA, but also the actual size of their share. The GVA for the manufacture of ceramic household and ornamental articles was generated to a large extent by personnel costs, whereas for the manufacture of ceramic tiles and flags the prime economic variable generating GVA was depreciation. In associated activities, gross profit represented 94 per cent of the industry's GVA, but for the manufacture of carpets and rugs that figure was only 4 per cent.

5.2.2 Employment

Employment, expressed as the average number of full-time employees, showed a relatively small increase compared with core CIs, but it was above the national average at 17.4 per cent compared with 13.4 per cent.

Table 5.5. Average Number of Employees in Partial CIs, 2002-2005

Industry	2002	2003	2004	2005
Wholesale and commission trade, except motor vehicles and motorcycles	16,779	38,854	49,938	67,698
Retail trade, except motor vehicles and motorcycles; repair of personal and household goods	8,825	10,150	11,594	16,565
Land transport; transport via pipelines	19,712	20,131	18,941	23,034
Water transport	639	592	711	12,388
Air transport	1,974	2,047	2,852	1,446
Supporting and auxiliary transport activities; activities of travel agencies	3,834	4,243	4,595	6,047
Post and telecommunications	5,669	4,921	5,221	6,493
Total Non-Dedicated CIs	57,599	77,782	94,254	133,896
Non-Dedicated CIs/National (%)	0.28	0.36	0.36	0.39

Source: NIS

The distribution of labor in partial CI components shows a concentration in the manufacture of leather and fur products and footwear. An important share in the increase in labor was recorded for architectural and engineering activities and related technical consultancy.

If we use the CANE classification, the highest shares for employment were recorded in the manufacture of other outerwear (over 37 per cent in 2005), the manufacture of footwear (26.2 per cent), architectural and engineering activities and related technical consultancy, figures similar to those for GVA.

GVA and employment structures were also influenced by the fact that in Romania there has been a great increase in so-called "lohn" manufacture, namely the manufacture of clothes and footwear based on foreign orders, models and materials using domestic labor. The goods are produced in Romania because of its lower labor costs but sold as end products on foreign markets.

If we analyze the GVA structures in the component industries, we notice a significant contribution from the manufacture of clothes, architectural and related activities and the manufacture of footwear.

Wages in partial CIs were below the national average in the period from 2002 to 2005, although a number of component industries, such as architectural activities, did record wages above it. Wages in the manufacture of clothes and footwear were below the national average, which resulted in a relatively modest contribution to value added.

The average wage in partial CIs approached the national average in the period from 2003 to 2004 thanks to a relatively good wage dynamic from those industries.

Labor productivity in partial CIs was in general lower than the national average. Several industries, such as textiles, architecture, engineering and related technical services, were above the national average in 2005. Most partial CIs were below the national average in productivity, however.

The change in productivity was above the national average for a large number of the component industries of partial CIs.

It is worth mentioning that the copyright component evaluation of many partial CIs (e.g. architecture, engineering, surveying), which was done separately from their related services, required very detailed analysis.

5.3 Economic Contribution of Non-Dedicated Copyright Support Industries

Non-dedicated copyright support industries (non-dedicated CIs) include the wholesale and retail trade, transport, storage, maintenance, rental services and repair of motor vehicles for business use and computers, where those support activities are connected with the production and distribution of copyright-protected goods and services. The industries concerned figure in the final stages of copyright-based activities, and comprise mainly services rendered to businesses and means of product distribution. They represent the spillover effect of other copyright-based activities in upstream industries.

In a more aggregated formula, non-dedicated industries are wholesale and retail trading in general, general transportation, telephony and Internet, with a proportion attributable to copyright works and other protected subject matter. The distribution aspects of these industries had to be very carefully analyzed when estimates were made of their contribution to core industries, due account being taken of the specific nature of activities related to many other, extra-copyright industries.

5.3.1 Gross Value Added

The economic contribution of non-dedicated industries to adjusted GDP fluctuated between 0.28 per cent and 0.39 per cent in the period analyzed (Table 5.6), which shows that the spillover effect of the core copyright industries is still low.

Table 5.6. GVA for Non-Dedicated Support Industries, 2002-2005 ('000'000 euros)

Industry	2002	2003	2004	2005
Wholesale and commission trade, except motor vehicles and motorcycles	16,779	38,854	49,938	67,698
Retail trade, except motor vehicles and motorcycles; repair of personal and household goods	8,825	10,150	11,594	16,565
Land transport; transport via pipelines	19,712	20,131	18,941	23,034
Water transport	639	592	711	12,388
Air transport	1,974	2,047	2,852	1,446
Supporting and auxiliary transport activities; activities of travel agencies	3,834	4,243	4,595	6,047
Post and telecommunications	5,669	4,921	5,221	6,493
Total Non-Dedicated CIs	57,599	77,782	94,254	133,896
Non-Dedicated CIs/National (%)	0.28	0.36	0.36	0.39

Source: NIS

Trade and transport show the greatest contribution to the GVA of non-dedicated industries at over 90 per cent.

The GVA trend was upward, with an increase of almost 100 per cent for all non-dedicated CIs. The change in GVA among the component industries was perverse and even contradictory, with significant increases being recorded for wholesale (3.3 times) and for retail (1.5 times), while terrestrial and air transport faced reductions. Water transport made an insignificant contribution.

5.3.2 Employment

Employment after correction for the copyright factor in the non-dedicated CIs increased from 11,821 employees in 2002 to 18,528 in 2005. The share of non-dedicated CIs in total national employment increased from 0.31 per cent to 0.43 per cent (Table 5.7).

Table 5.7. Average Number of Employees in Non-Dedicated CIs, 2002-2005 (number of workers)

Industry	2002	2003	2004	2005
Wholesale trade and commission trade, except motor vehicles and motorcycles	2,169	6,972	5,697	6,175
Retail trade, except motor vehicles and motorcycles; repair of personal and household goods	3,140	3,468	4,008	4,931
Land transport; transport via pipelines	4,134	3,109	3,391	3,303
Water transport	104	102	105	1,998
Air transport	110	112	112	70
Supporting and auxiliary transport activities; activities of travel agencies	320	395	410	431
Post and telecommunications	1,819	1,789	1,755	1,477
Renting of office machinery and equipment, including computers	1	1	2	3
Maintenance and repair of office, accounting and computing machinery	23	39	45	140
Total Non-Dedicated CIs	11,821	15,989	15,524	18,528
Total National	3,800,031	4,091,236	4,138,986	4,310,742
Non-Dedicated CIs/National (%)	0.31	0.39	0.38	0.43

Source: NIS

The major employers were in the two main component industries, trade and transport. Labor productivity in non-dedicated CIs was below the national average (around 8 per cent), even though some component industries were above it, namely air transport and rental of office machinery and equipment, including computers (2.8 times), support and auxiliary transport activities; travel agency activities (1.9 times) and wholesale and commission trade, except for motor vehicles and motorcycles (1.5 times). Analysis of GVA in relation to economic variables shows that profits and wages had the highest shares at 43.23 per cent and 38.14 per cent respectively, which underlines their importance in the trade and transport sectors.

The relatively high share of gross profit compared with the share of wages was an effect of the specific behavior of the trade and transport sectors, which increased the selling prices of copyright-based goods by applying various commissions.

Table 5.8. Average Monthly Nominal Gross Salary for Non-Dedicated CIs, 2002-2005 (euros/month)

Industry	2002	2003	2004	2005
Wholesale and commission trade, except motor vehicles and motorcycles	166	111	164	219
Retail trade, except motor vehicles and motorcycles; repair of personal and household goods	82	83	83	99
Land transport; transport via pipelines	180	154	154	185
Water transport	172	174	181	144
Air transport	457	436	458	569
Supporting and auxiliary transport activities; activities of travel agencies	328	308	317	390
Post and telecommunications	154	150	160	225
Renting of office machinery and equipment, including computers	83	88	148	133
Maintenance and repair of office, accounting and computing machinery	131	116	117	138
Total Non-Dedicated CIs	154	125	147	177
Non-Dedicated CIs/National (%)	95	85	90	86

Source: NIS

In general, average wages in non-dedicated CIs (Table 5.8.) were below the national average, with the exception of air transport and tourism.

Chapter 6 International Comparisons

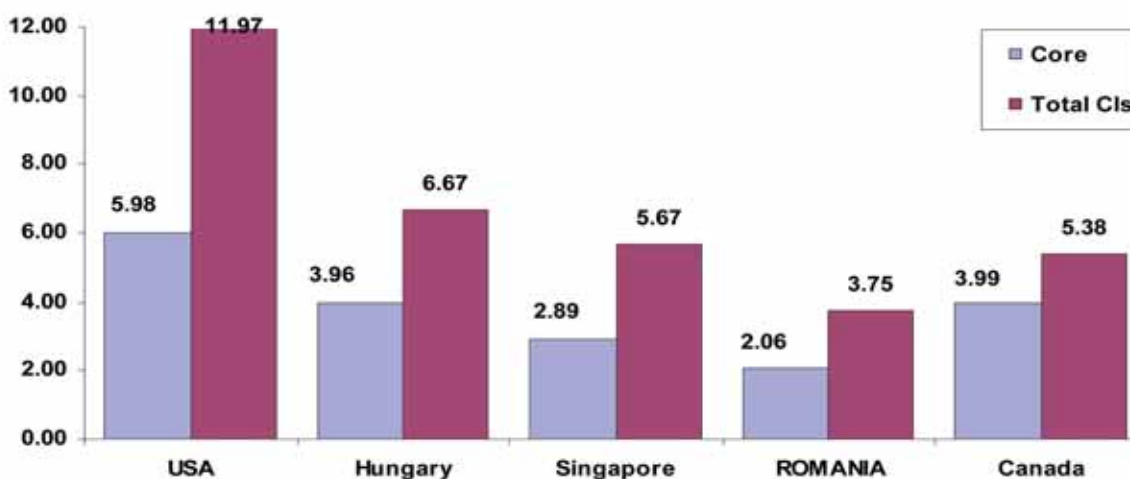
The international comparison of Romania with other countries with regard to the economic contribution of CIs took into account:

- methodological similarities to other countries;
- the final report on *The Contribution of Copyright and Related Rights to the European Economy* (2003) by Robert G. Picard, Timo E. Toivonen and Mikko Grönlund, which includes data from 2000 on copyright-based industries in the 15-country EU (EU-15);
- the study *National Studies on Assessing the Economic Contribution of the Copyright-Based Industries, Creative Industries*, No1, WIPO, May 2006, which includes national studies from Canada, Latvia, Hungary, Singapore and the United States;
- the study *The Economy of Culture in Europe*, UNESCO Culture Sector, The Global Alliance for Cultural Diversity, Brussels, 2006.

6.1 Contribution of Total Copyright Industries and Core Copyright Industries to GDP

A comparison of the contribution of total CIs and core CIs to GDP in Romania with the corresponding contribution in other countries was made for 2002. This comparative analysis reveals that the total contribution of Romanian CIs and core CIs to GDP was smaller than that of their counterparts in Canada, Hungary, Singapore and the United States (Graph 6.1). This is explained mainly by the lower level of economic and social development, and the consequent limited financial capacity and access to capital markets of the industries concerned.

Graph 6.1. The Contribution of Total CIs and Core CIs to GDP in 2002



Source: Own calculations and National Studies on Assessing the Economic Contribution of the Copyright-Based Industries, WIPO, 2006, pp. 340-341; IIPA Press Release on The 2006 Report, January 30, 2007

The comparison with EU member States and the United States in 2002 reveals that while the core CI contribution to GDP was only 2.06 per cent for Romania, the equivalent contributions in the US and some EU countries were much greater.

In Romania as well as in other EU countries, the contribution of total and core CIs to GDP was greater than that of certain industries such as the manufacture of chemicals, rubber and plastics and real estate operations (Annex 6.1).

Table 6.1. Evolution of Total CI Share in GDP in Several Industrialized Countries (%)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Australia	2.90	2.90	2.90	3.0	3.0	3.0	3.0	3.15	3.30	3.30	3.30	N/A
Canada	3.17	3.93	3.98	3.88	4.19	4.25	4.35	4.61	4.95	5.04	5.27	5.38
US	5.47	5.37	5.53	5.72	6.00	6.20	6.36	6.92	7.30	7.50	7.75	N/A

Source: Wall Communication, Inc. 2004

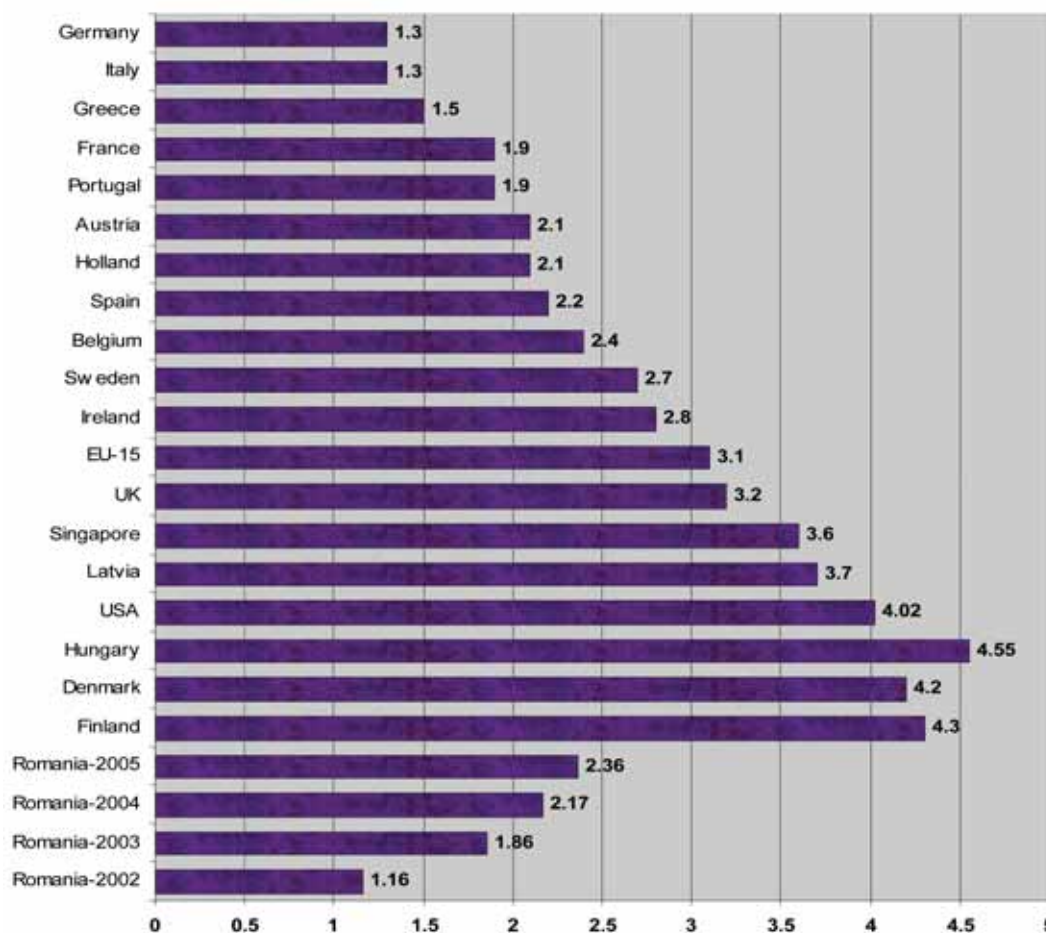
In Australia, Canada and the US, there was for a long time an upward trend in the total CI share in GDP (Table 6.1). The same tendency was also noted over a shorter period in Romania, where the contribution of total CIs to GDP increased from 3.75 per cent to 5.55 per cent, and the share of core from 2.06 per cent to 3.55 per cent, in the period from 2002 to 2005. This general tendency actually reflects the importance of CIs to the development of countries at different stages of social and economic growth.

For Romania, there are two major factors of rapid development of CI activities: transition to a market economy, political democratization and freedom and openness to globalization on the one hand, and the impact of ICT (digitization of the economy) and the rapid growth of imports of copyright goods and services, including foreign direct investment, on the other.

6.2 Contribution of Core Copyright Industries to Employment

In all countries, total CIs and core CIs were dynamic sectors of the economy, so their share in the total number of employees showed an general upward trend in the medium and long term, although there were significant variations in some years.

Graph 6.2. Core CI Contribution to Employment in Several Countries in 2000, and in Romania from 2002 to 2005 (%)

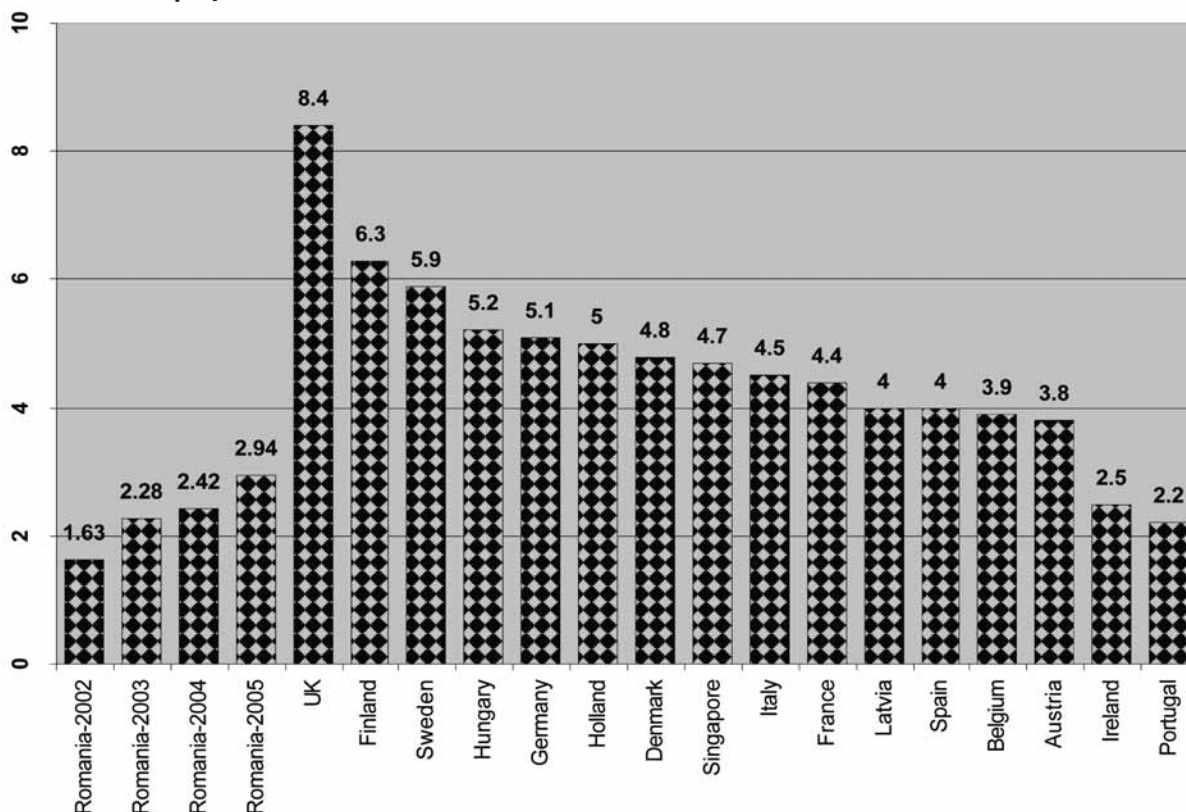


Source: Own calculations and National Studies on Assessing the Economic Contribution of the Copyright-Based Industries, WIPO, 2006, pp. 340-341

The proportion of core CI employees was lower in Romania than in several EU countries and indeed the EU average. However, there were also some EU countries with a lower proportion than Romania: Graph 6.3 shows the specific conditions of each country.

A remarkable result is that the figures for Romania in 2002 were very close to those for Germany and Italy.

Graph 6.3. Aggregated Contributions of Core and Interdependent CI Employment to Total National Employment in Several Countries in 2002 and in Romania from 2002 to 2005 (%)



Source: Own calculations and National Studies on Assessing the Economic Contribution of the Copyright-Based Industries, WIPO, 2006, pp. 340-341

If we allow for the contribution of core and Interdependent CIs, we notice that the gap between Romania and the other EU member States is narrowing, which is partly explained by a stronger spillover effect of core CIs in Romania.

6.3 Growth Rate of Total CIs and Core Copyright Industry Indicators

The percentage GVA growth rate of CIs, especially core CIs, in Romania was relatively high from 2002 to 2005.

Table 6.2. Average Annual Growth Rate of GVA in Romania for CIs

Industry	Average annual growth rate (%)
Total CIs, of which	26.78
Core	33.49
Interdependent	15.57
Partial	17.17
Non-Dedicated Support	24.21
Total National Economy	11.26

Source: Own calculations

The GVA change in CIs and core CIs in industrialized countries was higher than the national average growth in the economy, yet the rhythm of increase was consistently lower than in Romania. Even though the comparison is not general, our conclusion is borne out by the study *The Economy of Culture in Europe*, October 2006, which shows that from 1999 to 2003 the average annual growth rate of GVA from the cultural and creative sectors in Romania was 29 per cent, while in the EU it was 6.6 per cent (Annex 6.2). The difference of CIs and core CIs in Romania between 2002 and 2005 is due to the following:

- the Romanian economy succeeded in overcoming the severe economic decline of 1996 to 1999, recording relatively high growth rates (among the highest in Central Europe);
- the initial levels of the economic indicators for CIs and core CIs was relatively low, which allowed for high annual growth;
- the transition to a market economy reached the stage at which the predominance of the private sector brought about an improvement in the performance of market mechanisms, allowing for a better connection between CIs and other sectors, with generally favorable results;
- the FDI volume increased significantly and influenced the production figures of CIs;
- in this period, Romania's preparation for EU accession entered its final phase, which speeded up CI development.

6.4 Productivity and Other Performance Indicators

Labor productivity calculated as GVA per employee offered some conclusions regarding the efficiency of copyright-based industries, more precisely in terms of the value created by human resources. Comparable data at our disposal showed that in 2000 labor productivity in the EU-25 was 86,173 euros/employee in CIs and 101,538 euros/employee in core CIs (see *The Contribution of Copyright and Related Rights to the European Economy*, Final Report, October 2003, p.119).

The higher productivity level in core CIs reveals the effect of higher investment compared with non-core industries. In other words, inducements to invest in the software, database and press and publications sectors showed stronger beneficial effects compared with such inducements in other sectors. In 2000, the highest level of productivity in core CIs was recorded by Germany (143,906 euros/employee), while the lowest was Romania (23,149 euros/employee).

Table 6.3. GVA per Employee in Romania, 2002-2005 (euros/employee)

CIs	Years			
	2002	2003	2004	2005
Core	9,514	9,155	9,823	11,869
Interdependent	11,023	13,696	6,696	14,716
Partial	3,056	3,789	3,798	5,080
Non-dedicated	4,872	4,863	6,119	7,224
Total CIs	7,370	7,842	7,750	10,458
Total National	5,357	5,275	6,386	7,887

Source: Own calculations

Labor productivity in core CIs in Romania in 2005 was 11,869 euros per employee compared with an average of 10,458 euros per employee recorded by total CIs. The gap between Romania and the EU average was very wide; a ratio of almost 11:1 in 2005. Compared with Germany, the gap was 13:1 in 2000.

Unlike in EU member States, where the GVA per employee in core CIs is higher than that in interdependent CIs, the reverse is true in Romania: labor productivity is higher in interdependent than in core CIs. At first glance this situation might seem atypical, but the explanation is that Romania is an important net importer of copyright goods, and that leads to the development of non-core industries, especially the interdependent sector, which in turn has a favorable impact on the core CIs of other countries on account of transport, marketing and distribution services.

If we take 2002 as a reference for Romania and 2000 for the EU, the gaps are even wider.

Table 6.4. GVA per Employee in Core CIs in Romania, 2002-2005 (euros/employee)

Core CIs	2002	2003	2004	2005
Software and database	11,785	11,766	10,328	12,415
Press and literature	8,546	7,690	7,997	10,118
Theatrical productions and opera	2,740	4,085	10,449	4,449
Photography	3,131	2,746	3,187	3,955
Radio and television	13,026	13,357	16,133	20,537
Advertising	8,297	8,831	9,012	11,596
Professional organizations	15,092	68,947	3,388	13,136
Motion pictures and video	8,779	5,680	11,005	11,143
Total Core Industries	9,512	9,155	9,824	11,868
Total National	5,357	5,275	6,386	7,887

Source: Own calculations

The highest labor productivity levels in 2005 for core CIs in Romania (Table 6.4) were in radio and television (20,537 euros per employee), software and database (12,415 euros) and advertising (11,596 euros). However, total CIs and the productivity of the respective component industries were much lower than the core CI levels in industrialized countries, according to the data in Annex 6.3, which shows variations in this respect between Romania and other countries.

Labor productivity as a ratio of GVA to total personnel costs indicates the efficacy of employment use. In Romania the ratio improved for total CIs from 2.1:1 in 2002 to 2.5:1 in 2005. For core CIs the indicator was constant, with small annual fluctuations, and with a major impact on total CIs (Table 6.5).

Table 6.5. GVA to Personnel Expenses in CIs (euros)

CIs	Years			
	2002	2003	2004	2005
Core	2.4	2.5	2.7	2.5
Interdependent	1.9	3.8	2.3	3.5
Partial	1.6	1.7	1.7	1.6
Non-dedicated	2.0	2.4	2.6	2.6
Total	2.1	2.5	2.5	2.5
Total National	2.0	2.2	2.4	2.4

Source: Own calculations

The results from the above table were also borne out by the study *The Economy of Culture in Europe*, Brussels, October 2006. This study presented values very close to the results obtained by us for the cultural and creative sector, which is smaller in terms of the number of activities than the total CIs used in our research.

Table 6.6. Assessment of the Cultural-Creative Sector's Competitiveness in Romania and Other Countries, 1999-2003

Country	Productivity (GVA:personnel costs)					Profitability 1999-2003 (%)				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Austria			1.89	1.91	1.24	8.8	6.6	9.2	11.7	6.6
Belgium	1.52	1.5	1.51	1.41	1.93	10.7	10.9	9.5	10.0	10.4
Czech Rep.	1.21	1.79	1.72	1.65	1.58	...	...	...	37.9	12.4
Denmark	1.39	1.28	1.27	1.3	1.26	8.8	11.2	10.3	8.6	7.1
Estonia	1.4	1.68	1.62	1.51	1.52	6.4	9.5	8.0	8.8	10.2
Finland	1.52	1.49	1.46	1.39	1.41	12.6	11.7	11.0	9.8	11.3
France	1.63	1.62	1.56	1.59	1.59	11.3	11.7	10.8	11.1	10.8
Germany	1.71	1.4	1.54	1.52	1.55	...	9.6	9.6	7.2	8.7
Greece	...	...	...	...	...	14.1	12.3	10.9	10.2	10.0
Hungary	1.7	2.11	1.66	1.76	1.99	5.4	6.4	6.8	7.3	7.4
Ireland	...	...	...	...	...	11.1	13.9	11.4	11.5	12.3
Italy	1.67	1.69	1.68	1.61	1.57	9.0	8.2	8.1	8.2	8.8
Latvia	-0.7	-0.4	0.62	1.29	1.95	1.7	1.8	3.6	3.5	5.7
Lithuania	1.58	1.54	1.48	1.49	1.4	11.3	1.2	11.0	11.2	11.9
Luxemburg	...	...	...	...	...	3.3	3.9	1.4	3.7	3.8
Netherlands	1.61	1.17	1.22	1.28	1.34	9.4	11.1	11.7	6.9	9.4
Poland	1.76	1.16	1.19	1.33	1.44	11.0	4.8	6.1	6.2	6.0
Portugal	1.72	1.74	1.39	1.59	1.53	11.9	11.7	8.5	10.4	9.4
Slovakia	1.23	1.34	1.2	1.18	1.32	5.0	5.3	5.6	7.4	6.9
Slovenia	1.61	1.53	1.74	1.75	1.96	13.6	13.6	15.1	12.6	10.3
Spain	1.51	1.5	1.44	1.43	1.43	9.2	9.2	8.3	8.5	8.0
Sweden	1.55	1.56	1.51	1.37	1.49	10.5	10.9	10.1	9.5	9.9
UK	1.52	1.47	1.36	1.29	1.38	10.3	8.7	8.9	8.7	8.7
Bulgaria	1.52	1.53	1.56	1.69	1.7	7.1	5.5	6.4	7.3	7.7
Romania	1.46	1.76	1.86	2.08	3.06	6.5	9.1	11.1	14.0	15.4
Norway	1.33	1.3	1.25	1.27	1.28	8.3	7.7	7.5	7.0	7.3
Iceland	1.19	1.27	1.18	1.33	1.24	9.50	11.10	8.70	13.50	11.80
Total EU-25	1.43	1.45	1.45	1.48	1.52	9.30	9.30	8.90	10	9
Total 30 Countries	1.42	1.45	1.45	1.5	1.57	9.1	9.1	8.8	10.1	9.2

Source: *The Economy of Culture in Europe, Study prepared for the European Commission (Directorate General for Education and Culture), October 2006*

It is interesting to note that the indexes of CI profitability worked out in our study (Chapter 4) are 2-3 per cent lower than in the above-mentioned study for the cultural-creative sector. This is explained by the smaller number of industries studied. We also note that the profitability of the cultural-creative sector in Romania is higher than the EU-25 average and that of the other new member States. Our research reveals that the profitability index in core CIs in 2000-2005 reflected a downward trend, owing to high values in the initial periods (early 2002), when core CI activities had just started to develop.

The level of profitability of Romanian CIs can be considered satisfactory when compared with that of other sectors, although it has shown a downward trend and the differences between the component industries are quite considerable, which to a certain extent is normal in view of the wide diversity and the specificity of CI components.

6.5 Investment in Knowledge and Creativity

CIs are a strategic domain for investment policies, and a growing volume of investment expenditure in intangible assets is an important factor for both developed and developing countries: it offers evidence of the economic contribution of CIs to the knowledge-based economy and the information society, which is driven by scientific and cultural-artistic creativity.

Table 6.7. Level of Investment in Knowledge and Creativity Within the Cultural and Creative Sector; Evolution of Intangibles to Turnover Ratio, 1999-2003 (%)

Country	Years				
	1999	2000	2001	2002	2003
Austria	0.2	0.1	5.1	5.0	2.5
Belgium	1.4	3.5	3.0	2.6	2.3
Cyprus	...	...	...	...	...
Czech Republic	...	...	...	0.0	12.4
Denmark	3.0	8.9	9.7	10.7	7.9
Estonia	1.5	3.2	2.5	1.4	1.4
Finland	2.7	2.4	2.3	2.6	4.7
France	4.1	4.2	4.7	4.5	4.2
Germany	...	2.5	2.5	1.2	1.1
Greece	1.7	3.0	2.8	2.2	2.5
Hungary	0.6	1.9	1.8	1.3	1.9
Ireland	11.1	13.9	11.4	11.5	12.3
Italy	3.2	3.6	4.0	3.4	3.6
Latvia	0.8	0.7	0.7	0.7	0.8
Lithuania	11.3	11.2	11.0	11.2	11.9
Luxembourg	0.0	0.5	0.0	1.1	0.8
Malta	...	...	...	...	...
Netherlands	15.2	7.6	12.7	11.4	6.0
Poland	0.7	...	...	0.8	1.2
Portugal	1.0	1.1	1.6	1.8	1.5
Slovakia	0.5	0.5	0.3	0.3	0.3
Slovenia	1.7	1.5	4.6	2.3	0.7
Spain	3.2	4.0	3.5	3.2	2.9
Sweden	5.6	5.3	6.0	4.9	4.4
UK	6.3	11.1	11.8	9.0	8.4
Bulgaria	1.3	3.9	1.6	1.5	1.3
Romania	0.6	0.6	0.7	0.9	1.2
Norway	5.6	4.4	5.1	5.0	4.9
Iceland	4.2	4.3	2.4	4.2	4.2
Total EU-25	3.6	4.3	4.9	4.0	4.2
Total 30 countries	3.5	4.2	4.5	3.9	4.0

Source: *The Economy of Culture in Europe. Study prepared for the European Commission (Directorate General for Education and Culture), October 2006*

Table 6.7 shows that in comparison with the EU-25 countries, the EU-12 countries (new members) have a lower percentage share of investment in knowledge and creativity. In Romania, for instance, the share was 1.2 per cent in 2003 as against 12.3 per cent in Ireland, 8.4 per cent in the United Kingdom and 6 per cent in the Netherlands. This disparity between the two groups is less marked, however, than the gaps in productivity and profitability. At the same time, relative stability or small variations can be seen in the corresponding share for almost all countries over the period analyzed.

Judging by international comparisons between Romania and developed countries it is evident that CIs in Romania, while still modest, are expanding rapidly.

In an economic study conducted in 2006¹⁰ the International Intellectual Property Alliance (IIPA) showed that US copyright industries continued to lead the US economy in their contribution to job growth, GDP and foreign trade. Referring to the US copyright industries in 2005, Eric H. Smith, the representative of IIPA, said: "What is clear from this and previous studies of the copyright industries is that their contribution to this country's economic growth continues to increase in size and importance. Copyright industries are uniquely dependent on governments' willingness to enforce good laws, particularly as globalization expands and Internet and broadband penetration escalates rapidly around the globe."

The huge potential of e-commerce and the transmission of valuable copyright content over the Internet are major factors of continued growth and productivity in national economies, including that of Romania. Romania's integration into the EU and the effects of globalization will help strengthen the convergence process in Romanian copyright industries, at the same time as their specificities and their capacity for imparting positive economic, social and cultural influences are enhanced.

¹⁰ Siwek S., *Copyright Industries in the US Economy: The 2006 Report*, www.iipa.com

Chapter 7 Conclusions and Recommendations

7.1. Conclusions

Copyright-based industries in Romania have distinguished themselves by their dramatic quantitative and qualitative development in the period from 2002 to 2005, which has come about as a result of the profound changes occurring in the Romanian economy and society in general during the country's transition towards democracy and a market economy.

In the period analyzed, the Romanian economy recorded relatively high growth rates, relatively low unemployment and decreasing inflation from double-digit to single-digit levels. The period was characterized by the country's preparation for EU accession, the improved operation of its markets, a substantial increase in foreign direct investment (FDI) and the predominance of the private sector in the Romanian economy.

CI are a dynamic sector of the Romanian economy, and one that includes a wide variety of fields, sectors and sub-industries. The great volatility of the sector is due to an intensity of internal and external factors that affect copyright as a source of national income and wealth.

We draw five main conclusions from our analysis:

1. *Contribution to value added:* The economic contribution of CIs as defined and classified in four groups by the WIPO Guide (core, interdependent, partial and non-dedicated) was measured first using the share of total CI and of the four components in GDP.

The analysis revealed that CIs as a whole increased their share in GDP from 3.75 per cent in 2002 to 5.55 per cent in 2005. The core copyright industries increased their share from 2.06 per cent to 3.55 per cent, which means that they were the most prominent among all CIs, and the driving force behind the growth of the whole sector. The increase in the other industries' share was much smaller.

The share of CIs in GDP was greater than that of certain major industries in the Romanian economy, such as the manufacture of chemicals, the manufacture of rubber and plastic products, real estate activities, computers and related activities. This demonstrates the potential and importance of the CIs both now and in the future.

If we take into account the share of CIs in GDP, Romania matches the average of all countries. In the United States the indicator was 11.12 per cent in 2005 and 11.09 per cent in 2004 (*Copyright Industries in the U.S. Economy: The 2006 Report*). Both in Romania and elsewhere, an increase was noted in the CI share in GDP in the medium and long term, which reflected the growing contribution of these industries to economic and social growth in countries at different stages of development.

The average annual growth rate of GVA in CIs was 26.8 per cent over the period analyzed. The core industries were the most dynamic sector at 33.5 per cent, substantially exceeding the average annual growth rate of GDP. Only the ICT sector, which is itself closely related to the CI sector, registered comparable areas of growth throughout the period studied. The impressive dynamics of CIs over the period from 2002 to 2005 could be considered the reference for Romania's sustainable development.

It can be inferred from the above that CIs, and especially core CIs, have been highly dynamic sectors of the Romanian economy, but it should also be conceded that this was partly due to the low level of CI production and development at the outset.

2. Contribution to employment: Evidence that CIs contributed to an increase in Romanian employment is to be seen in the rise of this sector's share in average national employee numbers from 2.73 per cent in 2002 to 4.19 per cent in 2005. The numerical increase was 76,833 new jobs (full-time equivalent), with a very wide variety of skills gravitating towards cultural and artistic creativity development and dissemination.

The average number of employees in core CIs increased from 44,019 in 2002 to 101,801 in 2005, corresponding to a rise in percentage of the national total from 1.16 per cent to 2.36 per cent. CIs have significant job creation potential, especially for highly skilled and creative candidates who are willing to assimilate new cultural, artistic, scientific and technological skills.

In terms of their share of employment, the most important component industries of core CIs in 2005 were software publishing, other software consultancy and supply (24.33 per cent of the total number of CI employees), printing of newspapers and other printing n.e.c. (17.62 per cent), publishing of books, newspapers, journals and periodicals (12.96 per cent), advertising (14.36 per cent) and radio and television activities (12.27 per cent).

Advertising, theater and opera, press and literature were the most dynamic sectors with regard to employment.

Labor productivity in core CIs, in terms of GVA per employee, was 9,620 euros and 11,917 euros per employee in 2002 and 2005 respectively. This figure is more than ten times below that for developed countries (Canada, Germany, the United States and others).

Compared with the national average, profits per employee in 2005 were 1.53 times higher in total CIs, 1.79 times higher in core CIs and 2.27 times higher in interdependent CIs. This indicator, as well as labor productivity, fluctuated annually, although the trend was always upward.

3. Contribution to international trade. CIs are a sector that contributes significantly to the development of Romanian international trade.

The total volume of CI exports increased from 122.7 million euros in 2002 to 177.1 million euros in 2005. In the same period, core CI exports increased from 23.5 million euros to 55.6 million euros.

In relation to total Romanian exports, however, CI and core CI exports remained at rather modest levels, namely between 0.80 per cent and 0.94 per cent, which demonstrates their lack of competitiveness in international markets and the orientation of CI goods and services mainly towards the domestic market. Non-core industries (interdependent and partial) recorded much higher export volumes compared with core CIs, as the distribution and transport costs paid to dealers were extremely high compared with the actual value of the copyright goods exported.

Core CI exports exceeded the national total, which indicates a good prospective capacity for integration in international economic flows and globalization processes.

CI imports increased from 205.9 million euros in 2002 to 429.9 million euros in 2005, a rise of more than 100 per cent; the percentage share in total national imports was 1.08 per cent in 2002 and 1.31 per cent in 2005. Unlike CI exports, imports were dynamic, showing a consistently upward trend.

Core CI imports increased from 76.5 million euros in 2002 to 177.3 million euros in 2005; a rise of more than 130 per cent which exceeded the rise in total national imports (72 per cent in the period from 2002 to 2005). With imports growing faster than exports, the trade balance deficit of CIs worsened from -83.2 million euros in 2002 to -247.7 million euros in 2005. Romania's dependence on the import of copyright goods is increasing, which in turn impacts unfavorably on external debt in the medium and long term.

4. *The profitability of copyright-based industries* in the period from 2000 to 2005, expressed as the ratio of gross profit to turnover, revealed a reduction in the indicator from 8.90 per cent to 5.83 per cent. We regard core CIs as having recorded favorable levels of profitability for the whole period analyzed, even though they actually followed a downward trend. The fall in profitability can be explained not only by the increasing competition throughout the period, but also by the initially high level of the indicator, which was due to excess demand and only modest levels of production. The most profitable component industries of core CIs in 2005 were artistic and literary creation and interpretation (9.80 per cent), database activities (8.14 per cent), data processing (7.25 per cent), other software consultancy and supply (7.12 per cent) and reproduction of sound recordings (7.0 per cent).

5. *Salary level.* Compared with the national average, average monthly gross nominal salary levels were 1.28 times higher in all CIs, 1.49 times higher in core CIs and 1.26 times higher in interdependent industries. Salary levels in the partial and non-dedicated support industries were lower than the national average.

7.2 Recommendations

As a result of our analysis of the contribution of copyright-based industries to the Romanian economy, we can make several recommendations.

1. Considering the economic, social and cultural importance of CIs, a substantial improvement in regional and national statistics for core and non-core CIs is necessary, especially if we take the increasing impact of the information society and globalization into account.

A strategic approach to the CI sector would call for appropriate statistical tools and indicators to be set up and developed at national, regional and local levels.

An accurate and standardized statistical framework for CIs is necessary so that a strategy can be efficiently implemented and monitored. The national statistical system currently used in Romania is not suited to CI activities and occupations and does not produce the requisite data; international cooperation and a regular exchange of information in the CI field are of paramount importance if the theory is to be refined and better empirical information produced.

The improvement of statistics in Romania entails regular collection and collation of data on core, interdependent, partial and non-dedicated industries, in accordance with the WIPO classification and other international standards relating to gross output, value added, employment and foreign trade.

2. Bearing in mind that CIs have been considered important especially in the political and social fields, while their economic role has been analyzed, albeit to a somewhat lesser extent, in the national and international context, a special analysis of labor productivity, economic efficiency and profitability is called for. In order to measure the important economic and social impact of CIs and to have copyright efficiency better understood by Government decision-makers at all levels, an adequate and cohesive system of indicators has to be designed and calculated in comparative terms.

3. Sustainable development of the CI sector within the national economy requires coherent long-term strategic vision and policy tools with which to address the issues and the means at each stage of the process, taking into account the interconnections between the economic, social and environmental pillars of Romania's sustainable development.

This policy has to be the agreed outcome of a multi-stakeholder consultation based on a holistic approach to the interdependence of CIs and other sectors of the national economy, and also on consensus between Government, civil society and the private sector regarding the economic role of CI activities. This requires an institutionalized analytical and decision-making CI framework, which should be directed by the Government and based on a special legal instrumentation of copyright goods and services.

4. Labor in CIs has certain characteristic features regarding salary policies, level of education and professional specialization, type of employment (full-time or part-time, temporary or permanent), structure of employment with regard to age, socio-professional qualifications and so on. Research on these (including aspects of labor migration flow) with special reference to the CI sector would bring in the new elements and benchmarks necessary for decision-making in the field of employment.

5. The issue of access to capital markets and investment is a useful field of research which would increase the economic and social efficiency of CIs. The direct and indirect role of the State, which is involved through public-private partnerships, intangible resources and goods, subsidies and sponsorships granted for copyright activities with positive externalities, would have a beneficial effect on economic and social cohesion and inclusion. One particular feature of CIs is the fact that they enjoy public support and are partly administered by the State, which can intervene in its capacity as financier and employer. Moreover, new public management and governance are able to correct market failures in this field. Such failures are more specifically due to enforcement of the law of copyright and intellectual property, to the promotion of healthy, equitable social values and behavior and to environmental education. The problems of public-private partnerships in CIs are very specific and complex.

6. Bearing in mind that CIs are an important source of profit and revenue, and therefore a factor of economic growth, scientific and practical interest must also be focused on the intangible asset assessment methods in CI activity.

7. Estimating optimum copyright duration is a major economic efficiency issue, as it influences the choice of discount rates and the scale of cash flow.

8. Analysis of regional aspects of the contribution and development of CIs in relation to various enterprise categories assumes a special scientific and practical role, especially if we accept that CIs are becoming more and more integrated in the globalization process.

Given the wide diversity of CI structures, we recommend the adoption of specific approaches and methods for each sector and sub-sector involved in activities that have to do with the creation, production, distribution and use of copyright works.

Annexes

Annex 8.1

Contribution of the Cultural-Creative Sector and Other Industries to the European Economy

(% of GDP)

Country	Manufacture of food, drinks and tobacco	Manufacture of textile products and fabrics	Manuf. of chemicals	Manuf. of rubber and plastic products	Manuf. of machinery and equipment n.e.c.	Real estate	Computers and related activities	Cultural and creative sector
Austria	1.7	0.5	1.1	0.7	2.2	2.2	1.1	1.8
Belgium	2.1	0.8	3.5	0.7	0.9	1.0	1.2	2.6
Cyprus	2.7	0.4	0.5	0.3	0.2	...	0.6	0.8
Czech Rep.	2.8	1.0	1.3	1.5	2.3	1.4	1.2	2.3
Denmark	2.6	0.3	1.7	0.7	1.9	5.1	1.5	3.1
Estonia	2.2	1.9	0.6	0.6	0.6	2.8	0.7	2.4
Finland	1.5	0.3	1.1	0.7	2.1	1.8	1.5	3.1
France	1.9	0.4	1.6	0.7	1.0	1.8	1.3	3.4
Germany	1.6	0.3	1.9	0.9	2.8	2.6	1.4	2.5
Greece	...	...	...	...	...	...	...	1.0
Hungary	2.9	...	1.9	0.9	1.2	1.8	0.8	1.2
Ireland	5.3	0.2	11.5	0.3	0.5	1.2	1.7	1.7
Italy	1.5	1.3	1.2	0.7	2.1	1.0	1.2	2.3
Latvia	3.2	1.2	0.5	0.3	0.5	2.1	0.7	1.8
Lithuania	2.5	1.6	0.4	0.5	0.4	1.1	0.3	1.7
Luxembourg	1.0	0.9	0.4	2.0	0.6	...	1.2	0.6
Malta	...	...	...	...	...	...	...	0.2
Netherlands	2.2	0.2	1.7	0.4	1.0	2.3	1.4	2.7
Poland	4.7	0.8	1.4	0.9	1.2	1.3	0.6	1.2
Portugal	1.9	1.9	0.8	0.5	0.7	0.6	0.5	1.4
Slovakia	1.5	0.7	0.6	0.9	1.5	0.5	0.6	2.0
Slovenia	2.0	1.3	3.4	1.4	2.2	0.4	0.8	2.2
Spain	2.2	0.7	1.3	0.7	1.0	3.0	1.0	2.3
Sweden	...	...	...	...	...	4.0	2.2	2.4
United Kingdom	1.9	0.4	1.4	0.7	1.0	2.1	2.7	3.0
Bulgaria	2.2	2.0	1.1	0.4	1.3	0.4	0.3	1.2
Romania	1.9	2.1	0.8	0.5	1.0	0.5	0.5	1.4
Norway	1.7	0.1	0.8	0.2	0.8	2.7	1.3	3.2
Iceland	...	...	...	...	...	...	...	0.7

Source: *The Economy of Culture in Europe, Study prepared for the European Commission (Directorate General for Education and Culture), October 2006, p.68*

Annex 8.2

Change in the Cultural and Creative Sector's Turnover and GVA Increase

%

Country	Average growth of turnover	GVA Growth
Austria	5.4	2.8
Belgium	5.2	7.7
Czech Republic	15.5	56.0
Denmark	2.7	-1.9
Estonia	11.5	9.1
Finland	7.1	11.1
France	6.7	7.1
Germany	4.9	6.6
Greece	5.4	4.4
Hungary	17.1	7.6
Ireland	7.7	8.8
Italy	5.3	7.3
Latvia	7.7	17.0
Lithuania	5.1	67.8
Luxembourg	2.9	...
Malta	0.1	...
Netherlands	5.0	...
Poland	6.1	13.0
Portugal	10.6	6.3
Slovakia	3.9	15.5
Slovenia	17.9	5.4
Spain	10.5	9.0
Sweden	7.8	2.6
UK	6.6	1.7
Bulgaria	13.8	...
Romania	20.2	29.0
Norway	4.8	3.8
Iceland	8.3	4.1
Total EU-15	5.4	6.6
Total 30 Countries	8.1	12.3

Source: *The Economy of Culture in Europe, Study prepared for the European Commission (Directorate General for Education and Culture), October 2006, p.69*

Annex 8.3

GVA per Employee in Romanian Core Copyright Industries, 2002-2005

Euro

Industry	2002	2003	2004	2005
Book publishing	10,019	8,258	8,239	11,095
Newspaper publishing	3,739	3,869	4,500	5,837
Publishing of journals and periodicals	6,701	9,282	9,305	11,339
Publishing of sound recordings	4,942	7,882	5,643	8,458
Other publishing	6,327	4,671	6,488	9,170
Printing of newspapers	24,112	8,610	10,004	12,807
Printing n.e.c.	5,286	8,954	9,052	11,278
Bookbinding	3,861	3,603	3,287	4,612
Pre-press activities	9,785	7,312	7,642	8,915
Ancillary activities related to printing	5,350	5,239	5,313	5,496
Reproduction of sound recordings	7,392	5,654	5,572	8,005
Reproduction of video recordings	25,018	6,574	4,829	5,205
Reproduction of communication on computers	33,545	10,210	13,923	12,549
Software publishing	12,859	11,653	10,786	13,080
Other software consultancy and supply	...	14,224	11,165	13,278
Data processing	6,546	6,253	6,695	7,336
Database activities	10,809	7,872	7,685	8,113
Advertising	8,297	8,831	9,012	11,596
Photographic activities	3,131	2,746	3,187	3,955
Secretarial and translation activities	5,444	...	...	...
Activities of professional organizations	3,730	1,159	2,573	3,292
Motion picture and video production	8,999	6,455	11,755	11,745
Motion picture and video distribution	7,062	3,487	17,336	8,332
Motion picture projection	1,725	15,553	5,796	9,099
Radio and television activities	13,026	13,357	16,133	20,537
Artistic and literary creation and interpretation	6,103	9,031	30,027	7,630
Operation of arts facilities	14,802	5,180	2,605	2,132
Fair and amusement park activities	3,071	4,342	3,174	4,031
Other entertainment activities n.e.c.	...	3,991	4,760	5,460
News agency activities	3,616	5,336	12,542	6,194
Library and archives activities	9,099	3,772	7,750	8,835
Other recreational activities n.e.c.	3,754	3,563	3,726	4,188
Total Core Industries	9,512	9,155	9,824	11,868
Total National	5,357	5,275	6,386	7,887

Source: Own calculations based on Ministry of Finance data

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