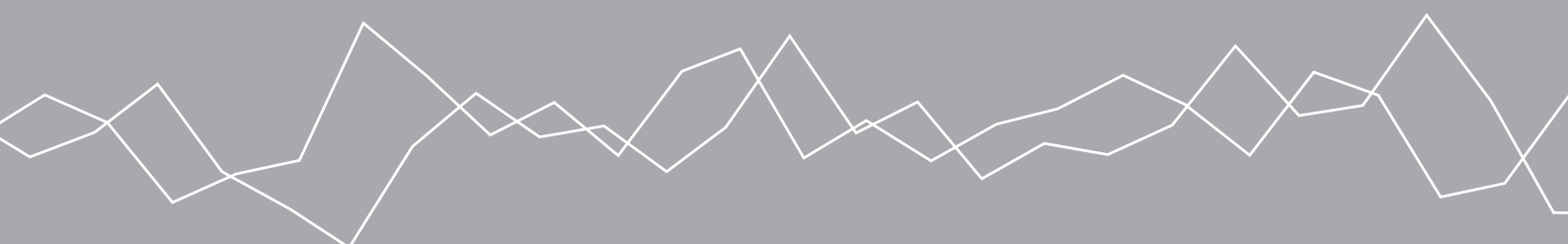


Economic contribution of EU industries relying on exceptions and limitations to copyright



seo economic research

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Computer & Communications Industry Association

seo economic research

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Table of contents

Executive summary.....	i
1 Introduction.....	1
2 Copyright and economic activity.....	3
3 Methodology.....	7
3.1 Selection of industries.....	7
3.2 Data collection.....	8
4 Results.....	9
Selected industries.....	9
Manufacturing.....	10
Trade.....	11
Services.....	11
Education.....	12
Creative industries.....	12
Data gaps.....	14
Summary of results.....	15
5 Conclusions.....	17
References.....	19
Appendix A: year 2003 data.....	21
Appendix B: data gaps.....	23
Appendix C: industries not selected.....	25
Appendix D: conversion of industries.....	26

Executive summary

The value added generated by industries in the European Union relying on exceptions and limitations to copyright amounted to € 1.1 trillion or 9.3% of GDP in 2007. Nearly 9 million people are employed in these industries, amounting to 4% of all EU employees. Employees earned € 307 billion in wages and salaries.

These figures are based on an analysis of 35 industries (in manufacturing, publishing, trade, services, education and the creative industries) that either use exceptions or limitations as an input in their production process or derive their demand from exceptions or limitations. Employment and salary data is exclusive of the education and creative industries, due to data limitations.

Between 2003 and 2007, industries relying on exceptions and limitations grew 3% faster than the EU economy.

These findings are a first step in recognizing the economic importance of exceptions and limitations to copyright for the EU. For the United States, Rogers and Szamosszegi (2007) were the first to identify industries relying on exceptions and limitations to copyright. For the EU, such a measurement is lacking. The European policy agenda is however addressing how exceptions and limitations should evolve in the era of digital dissemination. This study aims to contribute to that policy agenda.

The methodology follows four steps: identification and classification of industries, data collection, data analysis and presentation of results. Dealing with 27 Member States, this report faced significant measurement challenges. A conservative estimation approach was taken to meet those challenges. To select industries the following procedure was adopted: (a) the list of industries in Rogers and Szamosszegi (2007) is taken as a starting point; (b) The industry codes from step (a) have been converted to codes used by Eurostat; (c) Industries from step (b) for which the correspondence with step (a) is poor have been eliminated and (d) Industries from step (c) for which the association with limitations and exceptions to copyright is weak in a European context have been eliminated. Data was collected from Eurostat, for 2003 and 2007.

1 Introduction

Copyright has traditionally been studied from a predominantly legal perspective. Only recently the focus of study has shifted towards the economic significance of copyright. In 2003, the European Commission commissioned an economic assessment of the economic importance of copyright industries to the European economy (Picard et al. 2003). The World Intellectual Property Organization (WIPO) promotes surveying the economic contribution of industries that are based on copyright (WIPO, 2003), by providing guidelines for performing such studies. Picard et al. (2003) and the WIPO-Guide based studies have demonstrated that copyright based industries make an important contribution to the economy. This important role can be attributed to the fact that a large part of the present day economy relies on knowledge and creativity.

The advance of information and communication technologies (ICTs), such as the Internet, has triggered the European Commission to examine how a broad dissemination of knowledge, notably in the online environment, could be achieved in the context of existing copyright legislation (European Commission, 2009). The economic incentives for consumption, production and the distribution of numerous goods and services depend on the way in which intellectual property rights are designed and implemented. While the aforementioned studies firmly demonstrate the value creation by content industries, they are not sufficient to address Europe's policy ambitions for fostering the creation and dissemination of knowledge.

One of the components that deserves scrutiny is the importance of limitations and exceptions to copyright (European Commission, 2008). For example, research and training establishments lack the flexibility to disseminate materials, including for the purpose of distance learning. Libraries face constraints in digitization initiatives to preserve and disseminate archives. For the United States, Rogers and Szamoszszegi (2007) were the first to identify these so-called *fair use* industries. Analogous to the methodology laid out in the WIPO-Guide, their report measures the economic contribution of fair use industries. The 2010 update of this report, based on year 2007 data, concludes that the added value from fair use industries amounts to 16.2 % of GDP.

For the European Union (EU), such a measurement is lacking. This study fills this gap by measuring the economic activity associated to limitations and exceptions to copyright in the EU. This report is the first to demonstrate the economic benefits of limitations and exceptions to copyright in the EU in a quantitative way.

The structure of this report is as follows. Chapter 2 elaborates on limitations and exceptions in a European context and their importance for economic activity. Chapter 3 details our methodology and Chapter 4 presents the results. Chapter 5 concludes.

2 Copyright and economic activity

Directive 2001/29/EC of the European Parliament and of the Council, dated 22 May 2001, presents in Article 5 a list of limitations and exceptions to copyright. The box below provides an excerpt. We will sometimes use the term “exceptions” as shorthand expression referring to the full range of exceptions and limitations in the EC Directive.

The acts and uses described in the directive have the potential to enable economic activities that would be more difficult to achieve otherwise. There are at least two ways in which an industry can be linked to exceptions and/or limitations:

- a. Exceptions or limitations are an input to a production process. Creative processes often use intellectual property as an input, thereby relying on an exception or limitation;
- b. By creating demand for the industry’s output. Exceptions and limitations enable end user processes such as time and space shifting, these processes drive the demand for goods and services, e.g. blank recording media and MP3 players.

This report does not answer the question what a hypothetical world without limitations and exceptions would look like. Such a *counterfactual* analysis is not feasible for the EU economy as a whole. Nevertheless, it is without doubt that in a world without exceptions or limitations the risk of infringement would seriously impede numerous types of businesses and activities. This study shows the economic contribution of those industries. In a world without exceptions and limitations to copyright, those industries would either become less viable or would need substantial reorganizing, leading to a decline in innovation and growth. Awareness of the economic benefits of exceptions is an important building block for policy makers that are involved with the future of copyright.

Note that not only the production and consumption of content may depend on exceptions. The search for, distribution of and communication about numerous goods and services involve ICTs such as the Internet. The exploitation of ICTs relies heavily on exceptions. Search portals and web hosting would not be possible in its current form, absent limitations and exceptions to copyright (Rogers and Szamosszegi, 2010). The methodology for identifying industries that depend on exceptions will be introduced in the next chapter.

Box 2.1 Excerpt of Article 5 of Directive 2001/29/EC

<p>1. Temporary acts of reproduction referred to in Article 2, which are transient or incidental [and] an integral and essential part of a technological process and whose sole purpose is to enable:</p> <p>(a) a transmission in a network between third parties by an intermediary, or</p> <p>(b) a lawful use</p> <p>of a work or other subject-matter to be made, and which have no independent economic significance, shall be exempted from the reproduction right provided for in Article 2.</p> <p>2. Member States may provide for exceptions or limitations to the reproduction right provided for in Article 2 in the following cases:</p> <p>(a) in respect of reproductions on paper or any similar medium, effected by the use of any kind of photographic technique or by some other process having similar effects, with the exception of sheet music, provided that the rightholders receive fair compensation;</p> <p>(b) in respect of reproductions on any medium made by a natural person for private use and for ends that are neither directly nor indirectly commercial, on condition that the rightholders receive fair compensation which takes account of the application or non-application of technological measures referred to in Article 6 to the work or subject-matter concerned;</p> <p>(c) in respect of specific acts of reproduction made by publicly accessible libraries, educational establishments or museums, or by archives, which are not for direct or indirect economic or commercial advantage;</p> <p>(d) in respect of ephemeral recordings of works made by broadcasting organisations by means of their own facilities and for their own broadcasts; the preservation of these recordings in official archives may, on the grounds of their exceptional documentary character, be permitted;</p> <p>(e) in respect of reproductions of broadcasts made by social institutions pursuing non-commercial purposes, such as hospitals or prisons, on condition that the rightholders receive fair compensation.</p> <p>3. Member States may provide for exceptions or limitations to the rights provided for in Articles 2 and 3 in the following cases:</p> <p>(a) use for the sole purpose of illustration for teaching or scientific research, as long as the source, including the author's name, is indicated, unless this turns out to be impossible and to the extent justified by the non-commercial purpose to be achieved;</p> <p>(b) uses, for the benefit of people with a disability, which are directly related to the disability and of a non-commercial nature, to the extent required by the specific disability;</p> <p>(c) reproduction by the press, communication to the public or making available of published articles on current economic, political or religious topics or of broadcast works or other subject-matter of the same character, in cases where such use is not expressly reserved, and as long as the source, including the author's name, is indicated, or use of works or other subject-matter in connection with the reporting of current events, to the extent justified by the informative purpose and as long as the source, including the author's name, is indicated, unless this turns out to be impossible;</p> <p>(d) quotations for purposes such as criticism or review, provided that they relate to a work or other subject-matter which has already been lawfully made available to the public, that, unless this turns out to be impossible, the source, including the author's name, is indicated, and that their use is in accordance with fair practice, and to the extent required by the specific purpose;</p> <p>(e) use for the purposes of public security or to ensure the proper performance or reporting of administrative, parliamentary or judicial proceedings;</p> <p>(f) use of political speeches as well as extracts of public lectures or similar works or subject-matter to the extent justified by the informative purpose and provided that the source, including the author's name, is indicated, except where this turns out to be impossible;</p> <p>(g) use during religious celebrations or official celebrations organised by a public authority;</p> <p>(h) use of works, such as works of architecture or sculpture, made to be located permanently in public places;</p> <p>(i) incidental inclusion of a work or other subject-matter in other material;</p> <p>(j) use for the purpose of advertising the public exhibition or sale of artistic works, to the extent necessary to promote the event, excluding any other commercial use;</p>
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(k) use for the purpose of caricature, parody or pastiche;

(l) use in connection with the demonstration or repair of equipment;

(m) use of an artistic work in the form of a building or a drawing or plan of a building for the purposes of reconstructing the building;

(n) use by communication or making available, for the purpose of research or private study, to individual members of the public by dedicated terminals on the premises of establishments referred to in paragraph 2(c) of works and other subject-matter not subject to purchase or licensing terms which are contained in their collections;

(o) use in certain other cases of minor importance where exceptions or limitations already exist under national law, provided that they only concern analogue uses and do not affect the free circulation of goods and services within the Community, without prejudice to the other exceptions and limitations contained in this Article.

3 Methodology

In accordance with the WIPO-Guide, this study follows four steps: identification and classification of industries, data collection, data analysis and presentation of results. Data was collected from Eurostat, the main provider of statistical information at the European Union level. Dealing with 27 Member States, this report faced significant measurement challenges. Additionally, the structure of Eurostat does not always provide data in sufficient detail. A conservative estimation approach was taken to meet those challenges. Consequently, the results are a lower bound on the size of industries associated to exceptions and limitations.

3.1 Selection of industries

To select the industries to include in our measurement, the following 4-step procedure was adopted. Each of these steps will be discussed below:

- a. The list of industries in Rogers and Szamosszegi (2007) is the starting point;
- b. Convert the industry codes from (a) to codes used by Eurostat;
- c. Eliminate industries from (b) for which the correspondence with (a) is poor;
- d. Eliminate the industries from (c) for which the association with limits and exceptions to copyright is weak in a European context.

Step a

The U.S. study on fair use identifies industries by using the 2002 version of the North American Industrial Classification System (NAICS), which replaced the 1997 SIC standard. In the NAICS convention, a two-digit number refers to an industry sector. Three, four and five-digit codes refer to an industry subsector, an industry group, and industry, respectively. Codes of six or more digits are also considered industries in their own right even though they are part of a larger industry. The U.S. study incorporates data mostly at the three and four-digit industry group level.

Step b

The NAICS codes have been converted by SEO Economic Research to *Nomenclature statistique des activités économiques dans la Communauté européenne* (NACE) codes, which is the European standard used by Eurostat. To match NACE codes with the relevant NAICS codes correspondence tables provided by Eurostat were used.

Step c

In some cases, the European NACE industry description did not match the NAICS description. In that case, we eliminated the industry. This approach ensures that our measurement is conservative, in the sense that our result understates the true size of economic activity related to exceptions and limitations.

Step d

Exceptions and limitations to copyright generically differ between the United States and the 27 Member States of the European Union. A detailed assessment of copyright law in each Member State, confronting it with each industry in Rogers and Szamoszegi (2007) is far beyond the scope of this report. To meet this challenge, therefore, this study assesses each industry found in Step c by the following two rules:

Selection Rule A: The effect of exceptions as an input is recognizable in the output of the industry.

Selection Rule B: The demand for the industry would clearly be significantly lower if the copyright exception would not be in effect.

When an industry meets Rule A *or* Rule B, it will be included in our measurement.

The consequence of this 4-step procedure is that, in theory, the industries that depend on exceptions and/or limitations in a European context, but were not included in Rogers and Szamoszegi (2007) are not identified.¹ Again, this means that our results provide conservative estimates that are unlikely to overstate the size of industries relying on exceptions and limitations. The procedure results in a set of NACE industry codes, see Appendix D for a complete overview. The industries that were eliminated in Steps c and d are depicted in Appendix C.

3.2 Data collection

Eurostat is the main provider of statistical information at the European Union level. Within the European Union, statistical information is collected at the national level. Eurostat's database is an aggregation of these national databases. The quality of Eurostat's database is dependent on three factors: the quality of national databases, the amount of data supplied by national statistical information providers and the integration of this data into a new database.

For each industry identified, this report presents Eurostat data on revenues, value added and employment. Data has been collected for the years 2003 and 2007. Year 2007 is the most recent year available. The 2003 data allows a comparison over time. The European Union has 27 member states since the accession of Bulgaria and Romania in 2007. Eurostat data for 2007 are based on these 27 countries. The EU-aggregate in 2003 is still based on 25 member states and these figures will be adjusted.

Where data points were missing for the EU aggregate, an estimate has been generated on the basis of the countries included whenever this was possible.

¹ Put differently, these rules are designed to avoid type-I errors (including an industry that is not related to exceptions or limitations), at the cost of allowing type-II errors (not including an industry that is related to exceptions or limitations).

4 Results

This chapter provides the results for year 2007. Year 2003 data is contained in Appendix A.

Selected industries

The industries selected are depicted in the Table 4.1 below. The selected industries fall into the categories manufacturing (including publishing), trade, services, education and creative industries. For each industry the last column shows which selection rule applies.

Table 4.1 Selected industries

NACE code	Industry description	Rule
Manufacturing		
22,11	Publishing of books	A
22,12	Publishing of newspapers	A
22,13	Publishing of journals and periodicals	A
22,14	Publishing of sound recordings	A
22,15	Other Publishing	A
24,65	Manufacture of prepared unrecorded media	B
30,02	Manufacture of computers and other information processing equipment	B
32,2	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	B
32,3	Manufacture of radio and television receivers, sound or video recording or reproducing apparatus and associated goods	B
33,4	Manufacture of optical instruments and photographic equipment	B
Trade		
51,43	Wholesale of electrical household appliances and radio and television goods	B
51,84	Wholesale of computers, computer peripheral equipment and software	B
52,45	Retail sale of electrical household appliances and radio and television goods	B
52,47	Retail sale of books, newspapers and stationery	B

Services		
64,2	Telecommunications	B
72,21	Publishing of software	A, B
72,22	Other software consultancy and supply	B
72,3	Data processing	B
72,4	Data base activities	B
73	Research and development	A
74,11	Legal activities	A
74,14	Business and management consultancy activities	A
74,2	Architectural and engineering activities and related technical consultancy	A
74,81	Photographic activities	A
Education		
80,1	Primary education	A
80,21	General secondary education	A
80,22	Technical and vocational secondary education	A
80,3	Higher education	A
80,42	Adult and other education n.e.c.	A
Creative Industries		
92,11	Motion picture and video production	A
92,2	Radio and television activities	A
92,31	Artistic and literary creation and interpretation	A
92,34	Other entertainment activities n.e.c.	A
92,4	News agency activities	A
92,51	Library and archives activities	A

Source: SEO Economic Research

Manufacturing

Five manufacturing industries have been selected for their reliance on exceptions or limitations as an input (inclusion rule A), another five manufacturing industries have been selected because demand for its output is dependent on exceptions or limitations (inclusion rule B).

Total turnover in 2007 of the selected manufacturing industries was € 362 billion, while total value added was € 99 billion. The selected industries in manufacturing (including publishing) employ 1.4 million persons in the European Union, earning € 49 billion in wages and salaries.

Table 4.2 Exceptions and limitations in manufacturing (incl. publishing, values millions €)

Industry	Turnover	Value added at factor cost	Wages and salaries	Number of employees (x1,000)
DE2211 - Publishing of books	35,200	12,755	5,434	179
DE2212 - Publishing of newspapers	47,681	18,574	10,765	300
DE2213 - Publishing of journals and periodicals	43,445	15,935	8,249	259
DE2214 - Publishing of sound recordings	4,100	1,100	490	16
DE2215 - Other publishing	5,324	2,090	965	42
DG2465 - Manufacture of prepared unrecorded media	678	90	61	2
DL3002 - Manufacture of computers and other information processing equipment	53,387	8,234	4,168	119
DL322 - Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	105,661	25,061	11,837	257
DL323 - Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	46,947	7,681	3,598	156
DL334 - Manufacture of optical instruments, photographic equipment	19,127	7,718	3,548	118
Total	361,549	99,238	49,114	1,448

Source: Eurostat

Trade

All trade industries have been included on the basis of rule B. Value added equals € 75 billion. The industries employ 1,4 million employees earning € 37 billion in wages and salaries.

Table 4.3 Exceptions and limitations in trade (values millions €)

	Turnover	Value added at factor cost	Wages and Salaries	Number of employees (x1,000)
G5143 - Wholesale of electrical household appliances and radio and television goods	214,867	24,347	10,571	334
G5184 - Wholesale of computers, computer peripheral equipment and software	230,252	28,425	13,901	319
G5245 - Retail sale of electrical household appliances and radio and television	94,137	13,515	8,024	429
G5247 - Retail of books, newspapers and stationery	43,152	8,359	4,040	293
Total		74,646	36,535	1,374

Source: Eurostat

Services

A substantial part of the selected industries are service industries. The first five industries are included on the basis of the demand driving effect of exceptions and limitations. Other industries use exceptions and limitations as an input in the production process. Total turnover of selected

service industries in the European Union is € 927 billion and value added equals € 514 billion. Total of wages is € 221 billion, benefitting about 6 million employees.

Table 4.4 Exceptions and limitations in service industries (values millions €)

Industry	Turnover	Value added at factor cost	Wages and Salaries	Number of employees (x 1,000)
Internet services ¹	35,075	15,393	3,818	91
K7221 - Publishing of software	18,259	9,667	6,317	114
K7222 - Other software consultancy and supply	201,361	109,627	60,359	1,330
K723 - Data processing	61,922	42,809	19,464	699
K724 - Data base activities	7,980	4,156	1,883	49
K73 - Research and development	50,100	25,623	16,652	400
K7411 - Legal activities	134,952	93,313	21,934	949
K7414 - Business and management consultancy activities	139,712	71,954	37,189	817
K742 - Architectural and engineering activities and related technical consultancy	261,366	134,067	52,140	1,425
K7481 - Photographic activities	16,446	7,499	1,591	99
Total	927,173	514,108	221,346	5,973

Source: Eurostat. 1: Estimated at 8% of NACE industry I64,2 (Telecommunications), see appendix B.

Education

The education sector makes use of exceptions and limitations as an input in the production process. The availability of useful data is limited to public expenditures in 2006, it excludes private expenditure on education. This report estimates revenues for 2007 with public expenditure for year 2006, and assumes that value added equals 60 % of public expenditure.²

Table 4.5 Exceptions and limitations in education (in millions €)

	Expenditure (2006)	Estimated value added ¹
Public expenditure on primary education	136,636	81,982
Public expenditure on secondary education	257,860	154,716
Public expenditure tertiary education	130,657	78,394
Total public expenditure on education²	583,266	349,960

Source: Eurostat. 1: Estimated at 60% of expenditure. 2: This includes other categories.

Creative industries

² Note that this assumption is in accordance with Rogers & Szamosszegi (2010), where value added equals 60% of turnover for NAICS codes 6111, 6112 and 6113 in 2007 and 2002.

Table 4.1 shows that creative industries form an important part of the selected industries. Creative industries use exceptions and limitations of copyright as an input for their production processes. However, Eurostat does not provide data for these industries. Poor data availability for the creative industries is an issue that has been recognized by statistical offices. Statistics Netherlands CBS for example, has put the data availability for creative industries on the work plan.

To our knowledge, the 2003 study on the contribution of copyright to the European economy (Picard et al., 2003) is the only study that reports European data on the creative industries. This data is used to estimate the size of the creative industries in 2007, see Table 4.6. There are two issues to consider. First, the data reported in Picard et al. (2003) is year 2000 data. Second, the data do not cover all Member States in 2007. These two issues have been dealt with by applying the rate of change in nominal GDP, from 15 Member States in 2000 to 27 Member States in 2007. This change accounts for both the expansion with 12 Member States and the economic growth since 2000.³

Table 4.6 Creative industries in Picard et al. (2003)

NACE code	NACE description	Industry description in Picard et al.(2003)	No of countries	Turnover (millions €)	Value added (millions €)	Number of employees (x1,000) ¹
92,11	Motion picture and video production	Film and Video	15	46,434	20,885	190
92,2	Radio and television activities	Radio and television activities	12	27,682 ³	28,826	164
92,31	Artistic and literary creation and interpretation	Artistic and literary creation and interpretation	4	7,951	4,132	80
92,34	Other entertainment activities n.e.c.	N/A				
92,4	News agency activities	News and Feature	4	3,756	1,820	11
92,51	Library and archives activities	Libraries	12	7,580	3,933	135
Total				93,403	59,596	580
Total (2007, estimated)²				131,732	84,052	N/A

Source: Picard et. al. 2003. **1:** Employees data based on less countries; Film and video industries based on 9 countries, Radio and television activities based on 8 countries, News and Feature based on 3 countries, Libraries based on 14 countries. **2:** Estimated by applying rate of change in GDP from 15 Member States in 2000 to 27 Member States in 2007. **3:** This is exclusive of turnover in the United Kingdom.

³ This is a conservative estimate for two reasons. First, in Picard et al. (2003) data is unavailable for some of the 15 Member States (as can be seen in Table 4.6). These data gaps are not estimated. Second, there are indications that the creative industries have grown faster than the economy as a whole, see for example Poort et. al. (2010) on the Netherlands.

Data gaps

Where data points were missing for the EU aggregate, an estimate has been generated on the basis of the countries included. The table below provides a summary of the data gaps in the data collection and how they were dealt with. Appendix B provides more details.

Table 4.7 Summary of data gaps

Industry	Variable	Method
DL3002	Turnover	Estimated by using the ratio of value added to turnover in country data (19 countries)
DL3222	Value added	Estimated by using the ratio value added to turnover in industry DL 32
Sub industries of K72	All variables	Estimated by using individual countries data, see Appendix B
Sub industries of K74	All variables	Estimated by using individual countries data, see Appendix B
Internet services	All variables	Estimated at a fraction of 8% of industry I642 (Telecommunications), based on the Eurostat telecommunications inquiry, see appendix B
I642 Telecommunications	Turnover for 4 countries	Estimated by using the ratio value added to turnover in 23 countries
Education	Turnover, value added	Turnover estimated by public expenditure, value added estimated at 60% of public expenditure, all based on 2006
Creative industries	All	Estimated by applying GDP rate of change on year 2000 data in Picard et al. (2003)

Source: SEO Economic Research

Summary of results

Table 4.8 Industries relying on exceptions and limitations in the EU, 2007 (in millions €)

Industry	Turnover	Value added	Wages and salaries	Employees (x1,000)
Manufacturing (incl. publishing)	361,549	99,238	49,114	1,448
Trade	582,408	74,646	36,535	1,374
Services	927,173	514,108	221,346	5,973
Education	583,266	349,960	N/A	N/A
Creative industries	131,732	84,052	N/A	N/A
Total		1,122,004	306,996	8,795
EU 27 Economy	N/A	12,018,381	N/A	219,051

Source: SEO Economic Research.

Table 4.8 provides a summary of the results. In 2007, value added generated by EU industries relying on exceptions and limitations to copyright amounts to € 1.1 trillion or 9.3 % of GDP in the EU27. These industries employed nearly 9 million people or 4% of all employees in the EU. Employees benefitted from € 307 billion in wages and salaries. The results on employment and wages are exclusive of the education and creative industries, due to data limitations.

Table 4.9 Industries relying on exceptions and limitations in the EU, 2003 (in millions €)

Industries	Turnover	Value added	Wages and salaries	Employees (x1,000)
Manufacturing	329,548	91,247	48,790	1,514
Trade	465,012	62,169	31,287	1,283
Services	724,296	382,475	191,757	5,305
Education	509,685	305,811	N/A	N/A
Creative industries	N/A	N/A	N/A	N/A
Total		841,702	271,834	8,101
EU 25 Economy	N/A	10,007,033	N/A	193,615

Source: SEO Economic Research, based on Eurostat data for EU25. Data on the creative industries is unavailable.

Table 4.9 provides the contributions from industries relying on exceptions and limitations for 2003. The value added generated by the selected industries equals € 842 billion or 8.4 % of EU GDP in 2003. The industries employed 8 million people, who earned € 272 billion in wages and salaries. The value added generated by the selected industries (exclusive of the creative industries) grew with 23% between 2003 and 2007, which is faster than the EU GDP growth of 20% in the same period.⁴

⁴ All values are nominal. Note that both value added and GDP are based on EU25 in 2003 and EU27 in 2007, which makes the growth rates comparable.

5 Conclusions

This study is the first to measure the economic contribution of EU industries relying on exceptions and limitations to copyright. The value added generated by these industries amounts to € 1.1 trillion or 9.3% of EU GDP. Nearly 9 million people are employed in industries relying on exceptions or limitations, amounting to 4% of all EU employees. Employees earned € 307 billion in wages and salaries. These results are exclusive of the employment and wages in the education and creative industries. Between 2003 and 2007, industries relying on exceptions and limitations grew 3% faster than the EU economy.

These findings are an important first step in recognizing that exceptions and limitations support sizeable economic activities that would be more difficult to achieve otherwise. So far, the debate on copyright policy has only emphasized the size of economic activities that rely on the protection offered by copyright. This report demonstrates that exceptions and limitations to that protection also enable the production of numerous goods and services.

Present day policy interest for the design and implementation of copyright can be attributed to the fact that a large part of economic welfare relies on knowledge, creativity and ICTs used for searching and distributing goods and services. This study demonstrated that a given industry (e.g.: artistic and literary creation and interpretation) may benefit both from protection of copyright and from the exceptions and limitations to copyright. The measurement of economic activities does therefore not answer the question what a hypothetical world without limitations and exceptions would look like. Thus, more research is needed to inform the debate on the design of copyright and the scope of the protection it offers.

Future research steps would ideally offer a deeper understanding of the linkage between the economic incentives for production and consumption on the one hand, and the way in which intellectual property rights are designed on the other hand. Such research may ultimately lead to an economic welfare analysis of copyright and the socially optimal degree of protection.

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Appendix A: year 2003 data

Table A.1 Manufacturing industries (values in millions €)

	Turnover	Value added	Wages and salaries	Employees (x1,000)
DE221 – Publishing ⁵	120,000	45,000	24,000	760
DG2465 - Manufacture of prepared unrecorded media	1,642	233	155	5
DL3002 - Manufacture of computers and other information processing equipment	61,631	11,317	5,165	149
DL322 - Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	85,763	21,056	12,165	311
DL323 - Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	46,512	8,350	4,344	177
DL334 - Manufacture of optical instruments, photographic equipment	14,000	5,290	2,961	112
Total	329,548	91,247	48,790	1,514

Source: Eurostat

Table A.2 Trade industries (values in millions €)

	Turnover	Value added	Wages and salaries	Employees (x1,000)
G5143 – Wholesale of electrical household appliances and radio and television goods	160,566	18,682	8,063	284
G5184 - Wholesale of computers, computer peripheral equipment and software	184,651	21,956	12,757	322
G5245 - Retail sale of electrical household appliances and radio and television	80,035	13,102	6,981	400
G5247 - Retail of books, newspapers and stationery	39,759	8,428	3,486	277
Total		62,169	31,287	1,283

Source: Eurostat

⁵ The industry DE 221 is equal to the sum of 22.11, 22.12, 22.13, 22.14 and 22.15

Table A.3 Service industries (values in millions €)

Industry	Turnover	Value added	Wages and salaries	Number of employees (x1,000)
Internet Services ¹	10,054	5,469	2,150	57
K7221 - Publishing of software	3,559	2,036	1,096	26
K722 - Other software consultancy	178,365	90,996	53,717	1,186
K723 - Data processing	57,427	34,112	16,920	621
K724 - Data base activities	3,383	1,828	1,057	26
K73 – Research and development	35,000	18,000	13,000	332
K7411 – Legal activities	131,953	68,368	23,556	882
K7414 – Business and management	89,630	46,729	27,295	651
K742 – architectural and engineering activities	201,072	109,374	50,806	1,415
K7481 – Photographic activities	13,853	5,564	2,160	108
Total	724,296	382,475	191,757	5,305

Source: Eurostat. 1: estimated at 5% of industry I64,2 (Telecommunications), see Appendix B.

Table A.4 Public expenditure on education EU 25, 2003, values in millions €

Geography	Expenditure	Value added ¹
EU 27	516,767	310,060
Bulgaria	2,222	1,333
Romania	4,860	2,916
EU 25	509,685	305,811

Source: Eurostat. 1: estimated at 60% of expenditure.

Appendix B: data gaps

Telecommunications

When collecting the data for NAICS code 5181 (Internet service providers and web search portals) step b resulted in two NACE codes: 64,2 (Telecommunications) and 72,4 (Database activities). The former covers a significantly wider range of economic activities than those described in the NAICS description. Unfortunately, Eurostat does not provide data for sub industries of 64,2 (Telecommunications). To address that issue, we used Eurostat's database on the Information society, which has structural indicators on telecommunications services. These tables provide a breakdown of revenues to fixed network services, interconnection services and, for 14 countries, Internet services. The revenues from the provision of Internet services make up 8% of the total revenue in telecommunications services. On that basis, we included 8% of all indicators of NACE industry 64,2 (Telecommunications).

Computer related and other business activities

For estimating the sub industries of K72 and K74 the following approach was used:

- Compare data for N countries in the sub industry, say K721, with the higher aggregate industry K72. This results in fractions for the variables in industry K721 on the corresponding variable in industry K72;
- Combine these fractions with the available EU data on K72 to get estimations of EU data for K721.

Note that not all the sub industries were selected to be included. The following two tables give an overview of the sub industries from K 72 and K 74.

Table B.1 Sub industries of K72 Computer and related activities

Sub industries	Included	Countries used for estimation
K721 Hardware consultancy	No	
K722 software consultancy and supply	Yes	Ireland / Italy
K723 Data processing	Yes	Ireland / Italy
K724 Database activities	Yes	Ireland / Italy
K725 Maintenance, repair etc.	No	
K 726 Other computer related activities	No	

Source: SEO Economic Research

Table B.2 Sub industries of K74 Other business activities

Specific industries	Included	Countries used for estimation
K7411 Legal activities	Yes	Germany / Italy / Ireland
K7414 Business and management consultancy activities	Yes	Germany / Italy
K742 Architectural and engineering activities and related technical consultancy	Yes	Germany / Italy / Ireland
K7481 Photographic activities	Yes	Germany / Italy
Many others	No	

Source SEO Economic Research

If Ireland, Italy or Germany would be specialized in these industries, one could argue that the estimate *overstates* the size of these industries in other Member States. The authors assume that this effect is limited.

Appendix C: industries not selected

Table C.1 Industries eliminated in Step c

NAICS	Description	NACE industry description
54143	Graphic Design Services	Other business activities
53223	Video tape and disc rental	Renting of personal and household goods
44312	Computer & software stores	Other retail sale in specialized stores

Source: SEO Economic Research

Table C.2 Industries eliminated in Step d (values in € millions)

Industry	Turnover	Value added	Wages and salaries	Number of employees (x1,000)
DE222 - Printing and service activities related to printing	106,776	41,538	21,859	854
DE 223- Reproduction of recorded media	20,000	4,600	950	30
G 5261 – Retail via mail order houses	60,695	10,016	4,511	208
J65 Financial intermediation	N/A	N/A	N/A	N/A
J66 Insurance and pension funding	N/A	N/A	N/A	N/A
J 67 Activities auxiliary to financial intermediation	N/A	N/A	N/A	N/A

Source: SEO Economic Research, Eurostat

Appendix D: conversion of industries

The tables below represent the result of the 4-step procedure that was introduced in Chapter 3. The first two columns provide the list of industries in Rogers and Szamosszegi (2007) and correspond to Step a. The third and fourth columns are the result of the conversion to NACE industries (Step b). The industries that survive Step c are marked with 'X'. Finally, the industries that survive Step d are marked with 'A' or 'B', corresponding to Selection Rules A and B. The '*' indicates that the NACE industry has already been assessed.

Table D.1 Overview of the industry selection process - Core industries Rogers & Szamoszegi (2007)

NAICS	Industry description	NACE	Industry description	Step c	Step d
333315	Photographic & photocopying equipment manufacturing	30,01	Manufacture of office machinery		
		33,2	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment		
		33,4	Manufacture of optical instruments and photographic equipment	X	B
3341	Computer and peripheral equipment manufacturing	30,02	Manufacture of computers and other information processing equipment	X	B
3343	Audio & video equipment manufacturing	32,3	Manufacture of radio and television receivers, sound or video recording or reproducing apparatus and associated goods	X	B
334413	Semiconductors and related device manufacturing	24,66	Manufacture of other chemical products n.e.c.		
		32,1	Manufacture of electronic valves and tubes and other electronic components		
3346	Manufacturing and reproducing magnetic and optical media	22,31	Reproduction of sound recording	X	-
		22,32	Reproduction of video recording	X	-
		22,33	Reproduction of computer media	X	-
		24,65	Manufacture of prepared unrecorded media	X	B
454111	Electronic shopping	52,61	Retail sale via mail order houses	X	-
454112	Electronic auctions	52,63	Other non-store retail sale		

51111	Newspaper publishers	22,12	Publishing of newspapers	X	A
51114, 51119	Directory, mailing list, and other publishers	22,11	Publishing of books	X	A
		22,15	Other publishing	-	
		72,4	Database activities		
5112	Software publishers	72,21	Publishing of software	X	A, B
5161	Internet publishing and broadcasting	72,4	Database activities		
5181	Internet service providers and web search portals	64,2	Telecommunications	X	B
		72,4	Database activities	X	B
519	Other information services	74,87	Other business activities n.e.c.		
		75,14	Supporting service activities for the government as a whole		
		92,4	News agency activities	X	A
		92,51	Library and archives activities	X	A
5182	Data processing, hosting, and related services	74,81	Photographic activities	X	A
5231	Securities, commodity contracts, and investments	65,23	Other financial intermediation n.e.c.	X	-
		67,12	Security brokering and fund management	X	-
		67,13	Activities auxiliary to financial intermediation n.e.c.	X	-
5121	Motion picture and video industries	92,11	Motion picture and video production	X	A
		92,12	Motion picture and video distribution	X	
		92,13	Motion picture projection	X	
		92,2	Radio and television activities	X	A

		92,51	Library and archives activities		
5122	Sound recording industries	22,14	Publishing of sound recordings	X	A
		74,87	Other business activities n.e.c.		
		92,11	Motion picture and video production	*	
		92,2	Radio and television activities	*	
5239	Other financial investment activities	65,22	Other credit granting	X	-
		65,23	Other financial intermediation n.e.c.	X	-
		66,02	Pension funding	X	-
		67,12	Security brokering and fund management	X	-
		67,13	Activities auxiliary to financial intermediation n.e.c.	X	-
		67,13	Activities auxiliary to financial intermediation n.e.c.	X	-
		70,12	Buying and selling of own real estate	X	-
5241	Insurance carriers	66,01	Life insurance	X	-
		66,03	Non-life insurance	X	-
5259	Other investment pools and funds	65,23	Other financial intermediation n.e.c.	X	-
53223	Video tape and disc rental	71,4	Renting of personal and household goods n.e.c.		
5411	Legal services	74,11	Legal activities	X	A
5413	Architectural, engineering, and related services	33,3	Manufacture of industrial process control equipment		
		74,2	Architectural and engineering activities and related technical consultancy	X	A
		74,3	Technical testing and analysis		

		75,24	Public security, law and order activities		
54143	Graphic design services	74,87	Other business activities n.e.c.		
5417	Scientific research & development services	73,1	Research and experimental development on natural sciences and engineering	X	A
		73,2	Research and experimental development on social sciences and humanities	X	A
611a	Education services	63,23	Other supporting air transport services		
		74,14	Business and management consultancy activities	X	A
		74,87	Other business activities n.e.c.		
		80,1	Primary education		
		80,21	General secondary education	X	A
		80,22	Technical and vocational secondary education	X	A
		80,3	Higher education	X	A
		80,41	Driving school activities		
		80,42	Adult and other education n.e.c.	X	A
		85,32	Social work activities without accommodation		
		92,34	Other entertainment activities n.e.c.	X	A
		92,61	Operation of sports arenas and stadiums		
		92,62	Other sporting activities		
		93,05	Other service activities n.e.c.		
7111	Performing arts companies	92,31	Artistic and literary creation and interpretation	X	A
		92,33	Fair and amusement park activities		
		92,34	Other entertainment activities n.e.c.		

7115	Independent artists, writers, and performers	36,63	Other manufacturing n.e.c.		
		74,87	Other business activities n.e.c.		
		92,31	Artistic and literary creation and interpretation		
		92,4	News agency activities	X	A
811212	Computer and office machine repair and maintenance	30,02	Manufacture of computers and other information processing equipment		
		72,5	Maintenance and repair of office, accounting and computing machinery		

Source: SEO Economic Research

Table D.2 Overview of the selection process - non-core industries Rogers & Szamosszegi (2007)

NAICS	Industry description	NACE	Industry description	Step c	Step d
3230	Printing and related support activities	17,3	Finishing of textiles		
		21,25	Manufacture of other articles of paper and paperboard n.e.c.		
		22,21	Printing of newspapers	X	
		22,22	Printing n.e.c.	X	
		74,85	Secretarial and translation activities		
3342	Communications equipment manufacturing	31,62	Manufacture of other electrical equipment n.e.c.		
		32,2	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	X	B
		32,3	Manufacture of radio and television receivers, sound or video recording or reproducing apparatus and associated goods	*	
		33,2	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment		
		35,3	Manufacture of aircraft and spacecraft		
335920	Communication and energy wire and cable manufacturing	31,3	Manufacture of insulated wire and cable	X	-
		33,4	Manufacture of optical instruments and photographic equipment	*	
4234301	Computer & peripheral equip merchant wholesalers	51,84	Wholesale of computers, computer peripheral equipment and software	X	B
4234302	Computer software (packaged) merchant wholesalers	51,84	Wholesale of computers, computer peripheral equipment and software	*	
42511	Business to business electronic markets	50,1	Sale of motor vehicles		
		50,3	Sale of motor vehicle parts and accessories		
		50,4	Sale, maintenance and repair of motorcycles and related parts and accessories		

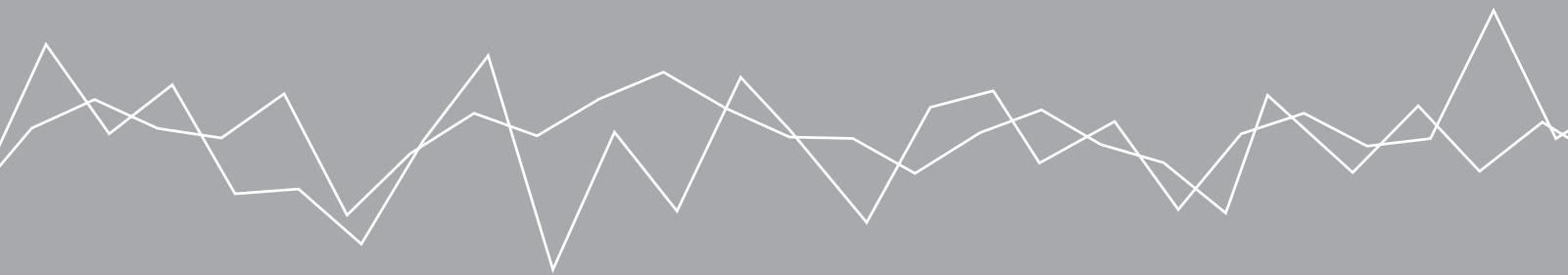
		51,11	Agents involved in selling agricultural raw materials, live animals, textile raw materials and semifinished goods		
		51,12	Agents involved in the sale of fuels, ores, metals and industrial chemicals		
		51,13	Agents involved in the sale of timber and building materials		
		51,14	Agents involved in the sale of machinery, industrial equipment, ships and aircraft		
		51,15	Agents involved in the sale of furniture, household goods, hardware and ironmongery		
		51,16	Agents involved in the sale of textiles, clothing, footwear and leather goods		
		51,17	Agents involved in the sale of food, beverages and tobacco		
		51,18	Agents specializing in the sale of particular products or ranges of products n.e.c.		
		51,19	Agents involved in the sale of a variety of goods		
42362	Electric appliance, TV & radio merchant wholesalers	51,43	Wholesale of electrical household appliances and radio and television goods	X	B
		51,47	Wholesale of other household goods		
4236901	Communications equipment & supp merchant wholesalers	51,43	Wholesale of electrical household appliances and radio and television goods	*	
		51,86	Wholesale of other electronic parts and equipment		
		51,87	Wholesale of other machinery for use in industry, trade and navigation		
42512036	Electrical & electronic goods agents & brokers	50,1	Sale of motor vehicles		
		50,3	Sale of motor vehicle parts and accessories		
		50,4	Sale, maintenance and repair of motorcycles and related parts and accessories		

		51,11	Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semifinished goods		
		51,12	Agents involved in the sale of fuels, ores, metals and industrial chemicals		
		51,13	Agents involved in the sale of timber and building materials		
		51,14	Agents involved in the sale of machinery, industrial equipment, ships and aircraft		
		51,15	Agents involved in the sale of furniture, household goods, hardware and ironmongery		
		51,16	Agents involved in the sale of textiles, clothing, footwear and leather goods		
		51,17	Agents involved in the sale of food, beverages and tobacco		
		51,18	Agents specializing in the sale of particular products or ranges of products n.e.c.		
		51,19	Agents involved in the sale of a variety of goods		
443112	Radio, television & other electronics stores	52,45	Retail sale of electrical household appliances and radio and television goods	X	B
		52,48	Other retail sale in specialized stores		
44312	Computer & software stores	52,48	Other retail sale in specialized stores		
4512	Book, periodical, and music stores	52,45	Retail sale of electrical household appliances and radio and television goods	X	B
		52,47	Retail sale of books, newspapers and stationery	X	B
5151	Radio & television broadcasting	64,2	Telecommunications	*	
		92,2	Radio and television activities	*	
5152	Cable networks	64,2	Telecommunications	*	
		92,2	Radio and television activities	*	

5171	Wired telecommunications carriers	64,2	Telecommunications	*	
5172	Wireless telecommunications carriers (except satellite)	64,2	Telecommunications	*	
5175	Cable and other program distribution	64,2	Telecommunications	*	
5173,5174,5179	Other telecommunications	64,2	Telecommunications	*	
5232	Securities and commodity exchanges	67,11	Administration of financial markets		
5242	Agencies, brokerages, and other insurance related activities	67,12	Security brokering and fund management	*	
		67,2	Activities auxiliary to insurance and pension funding		
5251	Insurance & employee benefit funds	65,23	Other financial intermediation n.e.c.	X	-
		66,01	Life Insurance	X	-
		66,02	Pension funding	X	-
		66,03	Non-life insurance		
5415	Computer system design and related services	72,1	Hardware consultancy		
		72,22	Other software consultancy and supply		
		72,3	Data processing	*	
		72,6	Other computer related activities		
5416	Management, scientific, & technical consulting services	63,4	Activities of other transport agencies		
		67,2	Activities auxiliary to insurance and pension funding		
		74,14	Business and management consultancy activities	*	
		74,2	Architectural and engineering activities and related technical consultancy	*	
		74,5	Labour recruitment and provision of personnel		
		74,6	Investigation and security activities	*	
611b	Education services	63,23	Other supporting air transport services	*	
		74,14	Business and management consultancy activities	*	

		74,87	Other business activities n.e.c.	*
		80,1	Primary education	*
		80,21	General secondary education	*
		80,22	Technical and vocational secondary education	*
		80,3	Higher education	*
		80,41	Driving school activities	*
		80,42	Adult and other education n.e.c.	
		85,32	Social work activities without accommodation	
		92,34	Other entertainment activities n.e.c.	*
		92,61	Operation of sports arenas and stadiums	
		92,62	Other sporting activities	
		93,05	Other service activities n.e.c.	*
7113	Promoters of performing arts, sports, and similar events	92,31	Artistic and literary creation and interpretation	*
		92,32	Operation of arts facilities	*
		92,33	Fair and amusement park activities	
		92,34	Other entertainment activities n.e.c.	*
		92,61	Operation of sports arenas and stadiums	*
		92,62	Other sporting activities	*
		92,72	Other recreational activities n.e.c.	
7114	Agents and managers for artists, writers, and performers	74,87	Other business activities n.e.c.	*

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