

# Economic Contribution of Copyright-Relevant Industries in the Netherlands



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# Economic Contribution of Copyright-Relevant Industries in the Netherlands

A Study Based on the WIPO Guide

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## Summary

- The **aim of the study** is to measure the economic contribution of *copyright-relevant and related rights-relevant industries*, defined by the World Intellectual Property Organization (WIPO) as “activities or industries where copyright [and related rights play] an identifiable role”.
- The assignment included adopting the **methodology** put forward in the so-called WIPO Guide on surveying the economic contribution of these industries, which intends to maximise comparability with studies in other countries and earlier national studies. Data from the Dutch statistical office *Statistics Netherlands* were collected and analyzed between November 2013 and February 2014. All results are reported for the year 2011.
- The gross **value added** of copyright-relevant industries amounted to € 35.9 billion in 2011, or 6.0% of the Dutch Gross Domestic Product (GDP). In 2005 the contribution of these industries to the Dutch GDP was 5.9%. The international average from available WIPO studies from varying years is a 5.2% contribution to the GDP. The result for 2011 does therefore not differ much from other country studies based on the WIPO Guide.
- **Employment** in the Dutch copyright-relevant industries is approximately 529,000 full-time equivalents (FTEs), equal to 7.4% of total employment in the Netherlands. The earlier Dutch study shows that the share of employment was 8.8% in 2005. In absolute terms employment decreased with 38,000 FTEs, which can largely be explained by economic downturn in the Interdependent Copyright Industries, such as ICT hardware manufacturing. The average share of national employment in other country studies equals 5.4%.
- The contribution of copyright-relevant industries to the Dutch economy in terms of value added (6.0%) and employment (7.4%) is **similar to results in studies from *Organisation for Economic Co-operation and Development (OECD)* member countries** (6.8% and 7.3%, respectively).
- For the selection of industries to include the WIPO Guide was used. The WIPO distinguishes four categories: Core Copyright Industries, Interdependent Copyright Industries, Partial Copyright Industries and Non-Dedicated Support Industries. The **Core Copyright Industries account for 77% of the value added** generated by Dutch copyright-relevant industries in 2011.
- The largest Core Copyright Industries are ***Software and Databases*** (2.3% of the GDP), *Press & Literature* (1.0% of the GDP) and *Advertising* (0.5% of the GDP). *Radio & Television, Visual & Graphic Arts, Motion Picture & Video, Music, Theatrical Productions & Operas*, and *Photography* together contributed 0.9% to the GDP. The amount of jobs in these core industries is estimated at 5.2% of all jobs, or 5.8% in terms of FTE. The self-employed are included in these estimates.

- Economic contribution was furthermore measured in terms of the *trade balance*, which equals exports minus imports. Copyright-relevant industries had a **trade surplus** of € 1.2 billion in 2011, or 2.7% of the national trade surplus. This figure includes *only tangible products* that cross the Dutch border – imports and exports of services and non-tangible goods (e.g., digital formats) are not included.
- Various **methodological issues and data limitations** had to be resolved to prepare this study. These include changes in national databases and industry classifications, overcoming ‘inaccurate’ industry classifications that lead to inconvenient amalgamations of economic activities and the determination of the ‘weight’ of copyright in each copyright-relevant industry, also known as the copyright factor. These issues have been resolved in cooperation with the WIPO where applicable.



## Samenvatting

- Het **doel van deze studie** is het meten van de economische bijdrage van sectoren in de Nederlandse economie waarvoor volgens de World Intellectual Property Organization (WIPO) het auteursrecht of naburige rechten een rol spelen.
- De onderzoeksopdracht schrijft de **methodologie** van de ‘WIPO Guide’ voor, ten behoeve van de vergelijkbaarheid met eerdere Nederlandse studies en buitenlandse studies op basis van deze richtlijnen. Deze studie gebruikt gegevens van het Centraal Bureau voor de Statistiek (CBS) die zijn verzameld en geanalyseerd in de periode november 2013 tot februari 2014. Alle metingen betreffen het jaar 2011.
- De bruto **toegevoegde waarde** van de auteursrechtrelevante sectoren is € 35,9 miljard in 2011, of 6,0% van het Nederlandse Bruto Binnenlands Product (BBP). In 2005 was de bijdrage van deze sectoren aan het BBP gelijk aan 5,9%. Het gemiddelde van alle beschikbare WIPO-studies uit diverse landen is een bijdrage van 5,2% aan het BBP. De Nederlandse bijdrage wijkt dus nauwelijks af van de andere landenstudies die zijn gebaseerd op de WIPO Guide.
- De **werkgelegenheid** in de Nederlandse auteursrechtrelevante sectoren is ongeveer 529.000 voltijdbanen (ook wel *full-time equivalents* of FTE's genoemd), dit is gelijk aan 7,4% van de totale werkgelegenheid. In de eerdere meting van 2005 was het aandeel in de werkgelegenheid 8,8%. In aantal banen gaat het om een daling van 38.000 FTE's, die grotendeels valt te verklaren door neergang in de zogeheten Afhankelijke Sectoren, met name de productie van ICT-hardware. Het gemiddelde aandeel in de nationale werkgelegenheid in andere landenstudies is 5,4%.
- De bijdrage van de auteursrechtrelevante sectoren aan de Nederlandse economie, gemeten in toegevoegde waarde (6,0%) en werkgelegenheid (7,4%), is **vergelijkbaar met de resultaten van andere lidstaten van de Organisatie voor Economische Samenwerking en Ontwikkeling (OESO)**, zijnde gemiddeld respectievelijk 6,8% en 7,3%.
- De keuze welke sectoren meetellen als de auteursrechtrelevante economie is volledig gebaseerd op de WIPO-Guide en is geen onderwerp van discussie in dit onderzoek. De WIPO benoemt vier categorieën van auteursrechtrelevante sectoren: Kernsectoren, Afhankelijke Sectoren, Deelsectoren en Niet-toegewijde Sectoren. De **Kernsectoren beslaan 77% van de toegevoegde waarde** van de Nederlandse auteursrechtrelevante sectoren in 2011.
- De grootse sectoren in de categorie Kernsectoren zijn *Software en Databases* (2,3% van het BBP), *Pers en Literatuur* (1,0% van het BBP) en *Reclame* (0,5% van het BBP). *Radio & Televisie*, *Beeldende Kunst & Grafisch Ontwerp*, *Film & Video*, *Muziek*, *Theater & Opera*, en *Fotografie* vertegenwoordigden tezamen 0,9% van het BBP. Het aantal banen in de Kernsectoren is geschat op 5,2% van alle banen, of 5,8% van alle *voltijd*banen. Zelfstandigen zonder personeel zijn meegeteld in deze berekeningen.

- De economische bijdrage van auteursrechtrelevante sectoren is daarnaast gemeten als het handelsbalanssaldo van export en import. De auteursrechtrelevante sectoren hadden een **handelsbalansoverschot** van € 1,2 miljard in 2011, gelijk aan 2,7% van het nationale handelsbalansoverschot. Dit cijfer bevat alleen fysieke producten die de Nederlandse grens passeren – import en export van diensten en niet-fysieke goederen (bijvoorbeeld digitaal gedistribueerde muziek) zijn hierin niet meegenomen.
- Beperkingen in de data en **methodologische kwesties** zijn zo veel mogelijk in overleg met de WIPO opgelost. Het gaat onder meer om veranderingen in de statistieken en sectorclassificaties, om over- en onderschatting van economische activiteiten en om het bepalen van het belang van auteursrecht voor uiteenlopende sectoren.

# 1 Introduction

## 1.1 Background

Since 2002 a large body of research has emerged on the economic contribution of industries for which copyright and related rights are relevant.<sup>1</sup> Inspired by the World Intellectual Property Organization (WIPO) and the guidelines it released in 2003, over 40 countries have measured the economic contribution of industries that are associated with copyright protection. Basically, these studies aggregate key economic variables from national statistical agencies, selecting the industries for which copyright is believed to be relevant. Since the copyright-relevant industries are a subset of the national economy, the resulting studies report the percentage contribution of the copyright-relevant industries to Gross Domestic Product (GDP), employment and foreign trade. The WIPO (2013) reviewed close to 40 national studies to date and concludes that the copyright-industries contribute on average 5.26% to national GDP and 5.49% to national employment.

The first study for the Netherlands dates from 1986 and the measurement was most recently repeated in 2000, 2003 and 2008. The study mentioned last (Leenheer *et al.*, 2008) was the first in this series that was based on the WIPO Guide. It concluded that in 2005 the value added of the Dutch copyright-relevant industries was € 30.5 billion, or 5.9% of GDP. The current report is an update of the country study for the Netherlands. In this report, macroeconomic data for 2011 is gathered, analysed and presented to aggregate key variables for the copyright-relevant industries. The selection of industries is based on the WIPO, in particular on the WIPO Guide (WIPO, 2003), other country studies – including Leenheer *et al.* (2008) for the Netherlands – and the draft update of the WIPO Guide (WIPO, 2014, forthcoming). Thus, whether copyright is relevant for a particular industry is determined by the WIPO and lies outside the scope of this report.

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<sup>1</sup> *Related or neighbouring rights* refer to the rights of “performers in respect of their performances, (...) of producers of phonograms in respect of their phonograms, (...) of broadcasting organizations in respect of their broadcasts, (...) of publishers in the typographical arrangements of their published editions and of the *sui generis* rights of makers of databases” (WIPO, 2003, p. 91). In this study, the term ‘copyright’ is consistently used to reflect both copyright and related rights.

### Box 1 Different forms of intellectual property rights

There are three forms of gaining protection for creative products: patents, copyrights, and trademarks. WIPO defines intellectual property and the rights to protect them as follows (<http://www.wipo.int/about-ip/en/>):

*“Intellectual property (IP) refers to creations of the mind, such as inventions; literary and artistic works; designs; and symbols, names and images used in commerce. [...]*

- A patent is an exclusive right granted for an invention, which is a product or a process that provides, in general, a new way of doing something, or offers a new technical solution to a problem. To get a patent, technical information about the invention must be disclosed to the public in a patent application. [...]
- Copyright is a legal term used to describe the rights that creators have over their literary and artistic works. Works covered by copyright range from books, music, paintings, sculpture and films, to computer programs, databases, advertisements, maps and technical drawings. [...]
- A trademark is a sign capable of distinguishing the goods or services of one enterprise from those of other enterprises. [...]”

The economic rationale of the copyright system is that it stimulates the creation of works by ensuring a monetary payoff to authors of such works. In the absence of copyright, the financial reward for engaging in creative production would in many cases be lower and this could lead to a lower number of works being available for society. However, other factors than copyright also play a role in the author’s decision to produce a work. When protected works are used as inputs for a new work, copyright may even complicate the production of works (see: Van der Noll & Poort, 2011; and Van der Noll *et al.*, 2012). The relationship between the design of the copyright system and the amount of creative production lies however outside the scope of this report. This report measures the economic contribution of industries for which the current copyright system, i.e. the system in the Netherlands in 2011, is relevant. This is not (necessarily) the same as the economic contribution of the copyright system *itself*. In this study the current Dutch copyright system is taken as a fact: the potential effects of adjustments to the current copyright system – e.g., a more or less strict copyright regime – as well as the potential effects of new forms of copyright protection are not analysed.

The rationale for the study is to provide updated information on the contribution of industries in the Netherlands for which copyright is relevant. By definition, the core of these industries is engaged in creative production and the results therefore directly portray the size of the creative industries. The report aims to provide an accurate picture of activities that involve literary and artistic creation. The statistics this report offers, as well as comparisons over time and with other countries, are descriptive in nature and can therefore – without further analysis – not be used to address policy issues or derive normative conclusions.

## 1.2 Method and Scope

This study investigates the economic contribution of Dutch industries that are considered copyright-relevant by the WIPO. The study has been prepared for the Dutch Ministry of

Economic Affairs. The research was carried out in the period November 2013 to May 2014. The supervisory committee installed by the Ministry consisted of Paul van Beukering, Anita Groeneveld, Lex Levisson, Cyril van der Net, Paul Rutten and Willem Wanrooij. The report also benefited from the input from Dimiter Gantchev and José Zofío of the WIPO.

Economic contribution is measured in value added, employment and foreign trade, and is subsequently related to the total Dutch economy. More specifically, the value added of copyright-relevant industries is expressed as a percentage of the Gross Domestic Product (GDP) and employment as a percentage of total Dutch employment. The trade balance position measures imports and exports and indicates whether copyright-relevant industries export more goods than they import – a trade *surplus* – or import more than they export – a trade *deficit*.

This report adopts the WIPO methodology. The WIPO (2003) prescribes the following four steps to measure economic contribution:

1. Identification and classification of industries;
2. Data collection;
3. Data analysis;
4. Analysis and presentation of results.

#### **Identification and Classification of Industries**

The WIPO provides detailed instructions on which industries it considers copyright-relevant by listing a selection of sector codes according to the International Standard Industrial Classification (ISIC) and the harmonised European sector classification NACE. Appendix A.1 to Appendix A.4 provide an overview of the copyright-relevant industries, including corresponding ISIC, NACE and SBI codes – the last mentioned being the official Dutch sector classification. As was mentioned previously, the list of codes provided by the WIPO is not subject to debate in this study. In other words, this report does not analyse whether an industry should be part of the copyright-relevant industries.

The WIPO Guide distinguishes four categories of copyright-relevant industries:

1. Core Copyright Industries: industries wholly engaged in the creation, production and manufacturing, performance, broadcasting, communication and exhibition of copyright-protected products (e.g., literature, music and movies);
2. Interdependent Copyright Industries: industries engaged in production, manufacturing and sales of equipment and utilities that facilitate the Core Copyright Industries (e.g., audio and video equipment, computers and blank recording material);
3. Partial Copyright Industries: industries in which a portion of the activities is related to the creation, production, manufacturing, performance, broadcast, communication and exhibition of copyright-protected products.(e.g., jewellery, furniture and architecture);
4. Non-dedicated industries: industries in which a portion of the activities is related to facilitating the broadcast, communication, distribution or sales of copyright-protected products, which do not belong to the Core, Interdependent or Partial Copyright Industries (e.g., telecommunications and transport).

## Data Collection

This research is based completely on official statistics from the Dutch statistical office *Statistics Netherlands* (CBS). CBS data on value added are based on an extensive survey among Dutch companies and ‘weighted’ to represent the full population of companies in a copyright-relevant industry. Data on jobs and self-employed people, also provided by *Statistics Netherlands*, cover the entire population (i.e., not a survey but a comprehensive registration). Company-level trade data by *Statistics Netherlands* were used to estimate the balance of trade of copyright-relevant industries. These data cover only *tangible products* that cross the Dutch border – imports and exports of services and non-tangible goods (e.g., digital formats) are not included in these statistics.<sup>2</sup> More detail on the data sources and data processing can be found in Appendix B.1.

The data were collected and processed in November and December 2013. At the time the latest year for which all statistics were available was 2011. Therefore, all outcomes in this study concern the year 2011, unless stated otherwise.

## Data Analysis and Presentation

Analysis of the data poses two key challenges: determining which portion of activities within Interdependent, Partial and Non-Dedicated Industries can be considered copyright-relevant, and overcoming ‘inaccurate’ sector codes that cover more economic activities than preferable. The former relates to so-called *copyright factors*, the latter – imperfections in sector classifications – to ‘shared’ and ‘over-inclusive’ (or: ‘partial’) sector codes.

### *Copyright Factors*

Since Core Copyright Industries are considered fully copyright-relevant by the WIPO, so is their economic contribution in terms of value added, employment and trade. For Interdependent, Partial and Non-Dedicated Industries, however, only a *fraction* of activities are considered part of the copyright-relevant economy. These fractions, known as *copyright factors*, vary per economic activity and are – apart from Core Copyright Industries, which by definition have a copyright factor of 100% – generally highest in Interdependent Copyright Industries and lowest in Non-Dedicated Support Industries.

At the time of the previous Dutch study (Leenheer *et al.*, 2008) only a handful of (then recent) studies were available that included empirical research (or: field research) on copyright factors – i.e., surveys among companies to determine the relevance of copyright for their economic activities. To this day, there has been no empirical research on copyright factors in the Netherlands. As a result, the copyright factors in the previous study were based on empirical findings from Singapore and Hungary. Since then, many new WIPO-based copyright studies have been published that include empirical research on copyright factors. In the present report a careful selection of these studies was made, based on – among other things – the information they provide on their research method and their deviation from other country studies. The result of this process is a ‘reasoned’ average of copyright factors originating from field research. Details on the copyright factors used in this study are provided in Appendix B.2.

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<sup>2</sup> Statistics Netherlands (CBS) does provide some aggregated statistics on international trade in services. However, these statistics are not available as company-level data (i.e., microdata) and the aggregated statistics are not organised according to the sector classification used in the WIPO Guide (see also: <http://bit.ly/PQnBlf>). Therefore, imports and exports of services could not be analysed in this study.

### *'Shared' and 'Partial' Sector Codes*

The WIPO lists sector codes that, it reckons, represent the copyright-relevant economy best. However, sometimes sector codes are not detailed enough to exactly match the copyright-relevant industry the WIPO has in mind. This results in some sector codes covering more than one copyright-relevant industry. For example, all types of artistic creation – e.g., authors, composers, musicians, directors, actors and visual artists – are covered by the same sector code (SBI / NACE code 90.03). This is what the WIPO calls a ‘shared’ sector code. Moreover, some sector codes cover both activities that the WIPO considers copyright-relevant (i.e., activities with a copyright factor higher than 0%) and activities that it does not consider copyright-relevant at all (i.e., activities with a copyright factor of 0%). These codes are called ‘partial’ and should not be confused with the *category* Partial Copyright Industries: ‘partial’ sector codes are the result of insufficient distinction between economic activities in sector classifications and occur in Core, Interdependent and Partial Copyright Industries, alike.

Both ‘shared’ and ‘partial’ sector codes can be overcome using more detailed underlying SBI codes: whereas the codes listed by the WIPO correspond to the fourth and final level of detail in the ISIC and NACE classifications (i.e., they are 4-digits codes), the SBI classification has an additional, fifth level of detail (i.e., 4-digits SBI codes can sometimes be broken down into 5-digits codes). For some 4-digits SBI codes that are ‘shared’ and/or ‘partial’, a more specific 5-digits SBI code exists that is neither ‘shared’ nor ‘partial’. When these 5-digits codes do not provide a solution – e.g., because the codes are ‘shared’ or ‘partial’ themselves – an allocation mechanism needs to be implemented for ‘shared’ sector codes (to divide them between economic activities) and a so-called *partiality coefficient* needs to be determined for ‘partial’ sector codes. For an explanation of both procedures, see Appendix B.3.

### *Presentation*

This report presents the outcomes of the analysis of the collected and processed data and compares these with the results of previous Dutch studies and with other country studies. Findings are displayed in illustrative tables and figures in order to provide a clear overview. Finally, the study results are recapitulated and interpreted by putting them in the context of recent developments.

### **Limitations**

The goal of this study is to provide updated information on the contribution of copyright-relevant industries in the Netherlands. The results should be comparable over time within the Netherlands and with other countries. The WIPO Guide aims at creating a bridge in that process. However, there are some limitations in the use of macro statistics that may lead over- or underestimations of relevant economic activities. The issue of statistical reliability will largely be addressed in the report. For instance, some methodological issues regarding the classification of industries and the copyright factors will be covered in Appendix B *Methodology*.

Furthermore, underestimations of relevant economic activity may arise. The main reason is the use of data from the statistical office which may exclude some copyright-relevant activities. As Bijlsma *et al.* (2009) argue, individual creators often contribute to (new) digital products without receiving any direct monetary benefits. Instead, they are intrinsically motivated or by collecting references for future monetary payments (e.g., for future employment). Individual open source software developers or creators of user generated content have similar incentives. A relevant part

of their created products and invested working hours occurs in the informal part of the economy (in the sense that these activities are not recorded in databases) and does therefore not appear in macro statistics. Also, as a result of the facilitating role of the internet, copyright protected works are traded in illegal channels, for instance by file sharing (also known as piracy). These activities are also not calculated in the standard macroeconomic indicators and are consequently not included in the measurement. See also Goodridge (2013) for a discussion on measuring the creative economy.

### 1.3 Reading Guide

The main results of this study are presented in Chapter 2. This concerns the economic contribution of copyright-relevant industries in terms of value added, employment and balance of trade. Further detail is provided by several breakdowns of these figures, up to the level of individual economic activities within the Core Copyright Industries. Chapter 3 puts the new findings into perspective by comparing them with other country studies on copyright based on the WIPO Guide, and by comparing the 2011-data with previous measurements of economic contribution. A synthesis of the study results is provided in Chapter 4. The appendices to this report offer a comprehensive methodological background to the calculations made in this study.



## 2 Economic Contribution of Copyright-Relevant Industries

### 2.1 Overview

#### 2.1.1 Value Added

*Gross value added* refers to the income formed in the production process, or: production value minus the value of intermediate consumption. It represents the value that is added to goods and/or services used in the production process, including depreciation (hence the term *gross* value added). The sum of all domestic value added including indirect taxes and subsidies, which is referred to as gross value added *at market prices*, equals the Gross Domestic Product (GDP) of a country.<sup>3</sup>

In 2011 the gross value added of copyright-relevant industries in the Netherlands was € 35.9 billion, which equalled 6% of the Dutch Gross Domestic Product (Table 1). Core Copyright Industries account for 77% of the value added, followed by Non-dedicated Support Industries (11%), Interdependent Copyright Industries (7%) and Partial Copyright Industries (5%).

Note that the value added – as well as the employment and the balance of trade reported further on – in all categories except Core Copyright Industries does not represent the *total* value added of the sector codes in question, but merely that part that is considered copyright-relevant as expressed by the respective copyright factors.<sup>4</sup>

**Table 1** Value added of copyright-relevant industries (2011)

Category	Gross value added at market prices	
	In million Euros	% of GDP
Core Copyright Industries	27,639	4.6%
Interdependent Copyright Industries	2,446	0.4%
Partial Copyright Industries	1,878	0.3%
Non-dedicated Support Industries	3,890	0.6%
<b>Copyright-relevant industries</b>	<b>35,853</b>	<b>6.0%</b>
<b>Total Dutch economy</b>	<b>599,047</b>	<b>100.0%</b>

Source: Analysis performed by SEO Economic Research using microdata concerning Production Statistics (PS) 2011 made available by *Statistics Netherlands*.

Using sector classifications to determine the economic contribution of copyright-relevant industries entails certain measurement errors, since sector classifications sometimes imperfectly depict the copyright-relevant industry. To be exact, some sector codes listed in the WIPO Guide

<sup>3</sup> Source: Statistics Netherlands, <http://bit.ly/1iQNdJA>.

<sup>4</sup> Even for Core Copyright Industries there can be small discrepancies between the reported figures and the actual value added and employment. This is the result of some sector codes being considered both a Core Copyright Industry as well as an Interdependent Copyright Industry, a Partial Copyright Industry and/or a Non-Dedicated Support Industry by the WIPO. For more details on these so-called 'shared' sector codes, see Appendix B.3.

also cover activities that the WIPO does not consider copyright-relevant (the sector code is defined too broadly). These so-called ‘partial’ sectors are by default fully *included* in the study outcomes (see Appendix B.3). As a matter of robustness check, Table 2 displays how results differ when ‘partial’ copyright-relevant sectors are fully *excluded*. Excluding the ‘partial’ copyright-relevant sectors results in a decrease in the valued added of 10%, to € 32.3 billion or 5.4% of the GDP (Table 2).<sup>5</sup> In a sense, Table 1 and Table 2 can be seen as the upper and lower bound estimation of the value added of copyright-relevant industries, respectively. In other words, the value added of copyright-relevant industries ranges from € 32.3 to € 35.9 billion, or 5.4% to 6% of the Dutch GDP.

**Table 2** Robustness check value added: excluding ‘partial’ copyright-relevant industries

Category	Gross value added at market prices $pc=0$		Difference with $pc=1$
	In million Euros	% of GDP	
Core Copyright Industries	25,844	4.3%	-6.5%
Interdependent Copyright Industries	1,915	0.3%	-21.7%
Partial Copyright Industries	1,083	0.2%	-42.3%
Non-dedicated Support Industries <sup>6</sup>	3,501	0.6%	-10.0%
<b>Copyright-relevant industries</b>	<b>32,344</b>	<b>5.4%</b>	<b>-9.8%</b>
<b>Total Dutch economy</b>	<b>599,047</b>	<b>100.0%</b>	

Source: Analysis performed by SEO Economic Research using microdata concerning Production Statistics (PS) 2011 made available by *Statistics Netherlands*.

## 2.1.2 Employment

Employment in the copyright-relevant industries is 529,000 full-time equivalents (FTEs), or 662,000 jobs (Table 3). This is equal to 7.4% of the total employment in the Netherlands (6.9% when measured in jobs instead of FTEs). Both employees and the self-employed are included in these measurements.

<sup>5</sup> The relatively low ‘sensitivity’ of the study outcomes with regard to value added – compared with for instance trade data, see Section 2.1.3 – is attributable to the detailed breakdown of value added in the statistical files. For ‘partial’ sector codes more detailed (i.e., fully copyright-relevant) underlying codes were used, when available. See Appendix B.3 for more information on this process.

<sup>6</sup> Since the copyright factor for the Non-Dedicated Support Industries is based on a formula that includes the weighted gross value added of Core, Interdependent and Partial Copyright Industries (see Table 25), this factor changes when ‘partial’ copyright-relevant sectors are excluded. In the robustness checks the copyright factor for the Non-Dedicated Support Industries decreases from 6.0% to 5.4%. This solely explains the lower valued added, employment and trade of the NDSIs in the robustness check, because there are no ‘partial’ sector codes in the NDSIs.

**Table 3** Employment in copyright-relevant industries (2011)

Category	Total employment (x 1,000)		% of national employment	
	Jobs	FTEs*	Jobs	FTEs*
Core Copyright Industries	503	413	5.2%	5.8%
Interdependent Copyright Industries	35	30	0.4%	0.4%
Partial Copyright Industries	52	36	0.5%	0.5%
Non-dedicated Support Industries	71	49	0.7%	0.7%
<b>Copyright-relevant industries</b>	<b>662</b>	<b>529</b>	<b>6.9%</b>	<b>7.4%</b>
<b>Total Dutch economy</b>	<b>9,608</b>	<b>7,167</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Analysis performed by SEO Economic Research using microdata concerning the Social Statistic File (SSB) 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

Table 4 and Figure 1 demonstrate, in that order, the breakdown of employment in employees and the self-employed, and the share of the self-employed in total employment. Of the total number of copyright-relevant jobs, 146,000 (22%) are accounted for by self-employed workers. The share of self-employed in total employment is highest in Core Copyright Industries (26%) and lowest in Interdependent Copyright Industries (7%). Moreover, the variance between economic activities *within* the four copyright-relevant categories is considerable. For example, 80% of employment in *Photography* is accounted for by self-employed workers. Other industries with a high percentage self-employed include the Interdependent Copyright Industry *Interior design* (close to 70%) and the Non-dedicated Support Industry *Retail sale via stalls and markets* (close to 60%).

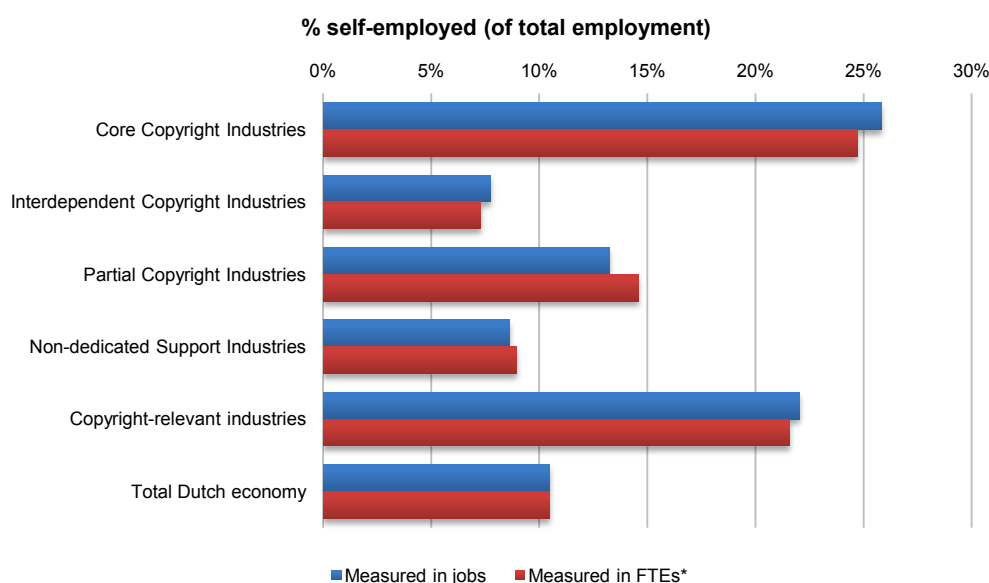
Note that for the self-employed only the number of *jobs* is registered (see Appendix B.1). Therefore in this study the full-time equivalents of the self-employed are *estimated* using the average part-time factors of the employed (data available per sector code). For example, if an employee in a copyright-relevant industry on average works 30 hours per week, the number of self-employed in that industry is multiplied by a part-time factor of 0.75 (30 / 40 hours) to obtain the number of self-employed FTEs.

**Table 4** Division of employment between employed and self-employed workers (2011)

	Employed (x 1,000)		Self-employed (x 1,000)	
	Jobs	FTEs	Jobs	FTEs*
Core Copyright Industries	373	311	130	102
Interdependent Copyright Industries	32	28	3	2
Partial Copyright Industries	45	31	7	5
Non-dedicated Support Industries	65	45	6	4
<b>Copyright-relevant industries</b>	<b>516</b>	<b>415</b>	<b>146</b>	<b>114</b>
<b>Total Dutch economy</b>	<b>8,604</b>	<b>6,418</b>	<b>1,004</b>	<b>749</b>

Source: Analysis performed by SEO Economic Research using microdata concerning the Social Statistic File (SSB) 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

Figure 1 Relatively high percentage of self-employment in copyright-relevant industries



Source: Analysis performed by SEO Economic Research using microdata concerning the Social Statistic File (SSB) 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

The so-called 'partial' sectors are by default fully *included* in the study outcomes (see Appendix B.3). As a matter of robustness check, Table 5 displays how results differ when 'partial' copyright-relevant sectors are fully *excluded*. Leaving out 'partial' sectors reduces the employment of copyright-relevant industries by 10 to 11 percent (Table 5). Based on this robustness check, the employment in copyright-relevant industries ranges from 476,000 to 529,000 FTEs, or 6.6% to 7.4% of the Dutch national employment.

Table 5 Robustness check employment: excluding 'partial' copyright-relevant industries

Category	Employment $pc=0$ (x 1,000)		% National $pc=0$		Difference with $pc=1$	
	Jobs	FTEs*	Jobs	FTEs*	Jobs	FTEs*
Core Copyright Industries	467	386	4.9%	5.4%	-7.1%	-6.7%
Interdependent Copyright Industries	26	23	0.3%	0.3%	-25.2%	-24.4%
Partial Copyright Industries	33	23	0.3%	0.3%	-36.9%	-36.9%
Non-dedicated Support Industries <sup>6</sup>	64	44	0.7%	0.6%	-10.0%	-10.0%
<b>Copyright-relevant industries</b>	<b>591</b>	<b>476</b>	<b>6.1%</b>	<b>6.6%</b>	<b>-10.7%</b>	<b>-10.0%</b>
<b>Total Dutch economy</b>	<b>9,608</b>	<b>7,167</b>	<b>100.0%</b>	<b>100.0%</b>		

Source: Analysis performed by SEO Economic Research using microdata concerning the Social Statistic File (SSB) 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

### 2.1.3 Balance of Trade

The trade surplus of copyright-relevant industries – total exports minus total imports – totalled € 1.2 billion in 2011, or 2.7% of the total trade surplus of the Netherlands (Table 6). Nearly half of the exports is accounted for by Core Copyright Industries, which also have – by far – the highest contribution to the national trade surplus (4.2%). Partial Copyright Industries and Non-

Dedicated Support Industries import more goods than they export, therefore they have a trade deficit.

**Table 6 Trade balance of copyright-relevant industries (2011)**

Category	Exports (million Euros)	Imports (million Euros)	Trade balance (million Euros)	As percentage of total trade balance
Core Copyright Industries	9,208	7,332	1,877	4.2%
Interdependent Copyright Industries	5,750	4,525	1,226	2.8%
Partial Copyright Industries	1,208	1,564	-356	-0.8%
Non-dedicated Support Industries	2,919	4,478	-1,559	-3.5%
<b>Copyright-relevant industries</b>	<b>19,086</b>	<b>17,898</b>	<b>1,188</b>	<b>2.7%</b>
<b>Total Dutch economy</b>	<b>409,358</b>	<b>364,922</b>	<b>44,437</b>	<b>100.0%</b>

Source: Analysis performed by SEO Economic Research using microdata concerning International Trade of Goods (IHG) 2011 made available by *Statistics Netherlands*; Economy total provided by CBS *Statline*.

*Re-exports*, the flow of goods that are (temporarily) owned by a Dutch entity but that do not undergo significant industrial processing, are also part of the imports and exports in Table 6. This includes products that are cleared by Dutch distribution centres and handed over to other (European) countries.<sup>7</sup> Economy-wide, re-exports accounted for 49% of total Dutch goods imports in 2011 and 44% of total Dutch goods exports.<sup>8</sup> Although shortly in Dutch ownership, these products are generally not considered actual Dutch goods. Therefore, it makes sense to also present the imports and exports excluding the re-exports. The trade balance, by definition, remains the same, since re-exports are subtracted from both sides of the balance.

When excluding re-exports, the total imports and exports by copyright-relevant industries in 2011 decrease by more than 70% to € 4.3 billion and € 5.5 billion, respectively (Table 7). In other words: Dutch goods account for (just) under 30% of the goods imported and exported by copyright-relevant industries. Core and Interdependent Copyright Industries have the highest share of re-exports, the Non-Dedicated Support Industries the lowest.

**Table 7 Trade balance excluding re-exports of copyright-relevant industries (2011)**

Category	Exports* (million Euros)	Imports* (million Euros)	Trade balance* (million Euros)	As percentage of total trade balance
Core Copyright Industries	2,592	716	1,877	4.2%
Interdependent Copyright Industries	1,437	211	1,226	2.8%
Partial Copyright Industries	365	720	-356	-0.8%
Non-dedicated Support Industries	1,076	2,635	-1,559	-3.5%
<b>Copyright-relevant industries</b>	<b>5,469</b>	<b>4,282</b>	<b>1,188</b>	<b>2.7%</b>
<b>Total Dutch economy</b>	<b>231,064</b>	<b>186,627</b>	<b>44,437</b>	<b>100.0%</b>

Source: Analysis performed by SEO Economic Research using microdata concerning International Trade of Goods (IHG) 2011 made available by *Statistics Netherlands*; Economy total provided by CBS *Statline*; \* = Excluding re-exports.

<sup>7</sup> Re-exports should not be confused with *transit trade*, which concerns goods that pass through Dutch territory while remaining property of a foreign entity.

<sup>8</sup> Source: CBS *Statline*, <http://bit.ly/1cgtoGd>.

Excluding ‘partial’ copyright-relevant sector codes – codes that include economic activities that the WIPO does not consider copyright-relevant – reduces the trade surplus by 39% to € 728 million, or 1.6% of the national trade surplus (Table 8). In other words, the trade surplus of copyright-relevant industries ranges from € 728 million to € 1.2 billion.

Note that due to confidentiality issues, the trade data for some sector ‘partial’ codes had to be merged with ‘non-partial’ codes. This results in minor inaccuracies in the robustness check of the trade balance data: nine ‘partial’ sectors are unjustly counted in the robustness check as they are merged with a ‘non-partial’ sector, while seven ‘non-partial’ sectors are unjustly left out of the results as they are merged with a ‘partial’ sector.<sup>9</sup>

**Table 8** Robustness check trade balance: excluding ‘partial’ copyright-relevant industries

Category	Trade balance <i>pc=0</i> (million Euros)	As percentage of total trade balance	Difference with <i>pc=1</i>
Core Copyright Industries	1,888	4.2%	0.6%
Interdependent Copyright Industries	545	1.2%	-55.5%
Partial Copyright Industries	-302	-0.7%	-15.0%
Non-dedicated Support Industries <sup>6</sup>	-1,403	-3.2%	-10.0%
<b>Copyright-relevant industries</b>	<b>728</b>	<b>1.6%</b>	<b>-38.7%</b>
<b>Total Dutch economy</b>	<b>44,437</b>	<b>100.0%</b>	

Source: Analysis performed by SEO Economic Research using microdata concerning International Trade of Goods (IHG) 2011 made available by *Statistics Netherlands*; Economy total provided by CBS *Statline*.

## 2.2 Core Copyright Industries

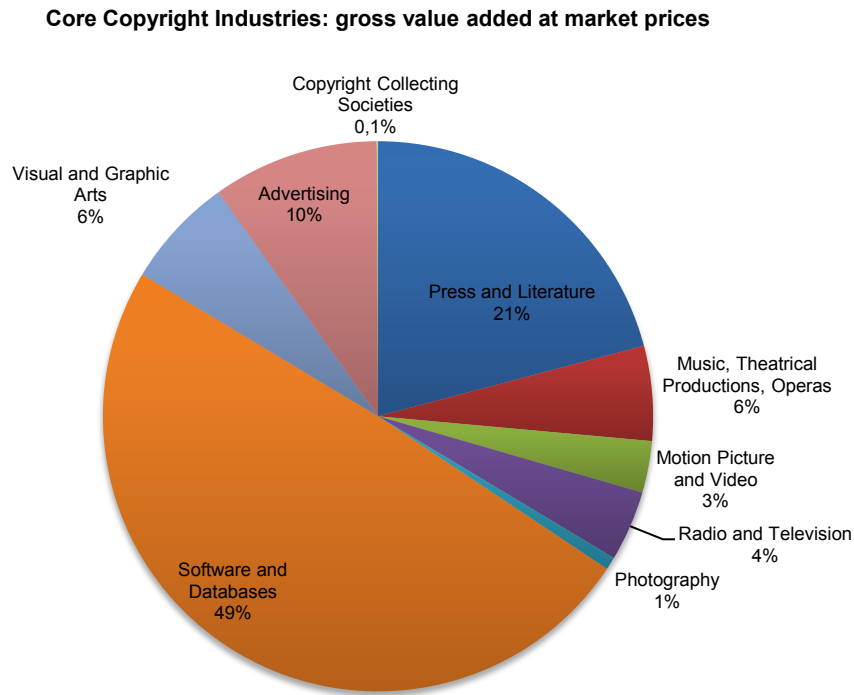
Sections 2.2 to 2.5 provide further insight into the various Core, Interdependent, Partial and Non-Dedicated Support Industries.

Core Copyright Industries are “industries that are wholly engaged in creation, production and manufacturing, performance, broadcast, communication and exhibition, or distribution and sales of works and other protected subject matter” (WIPO, 2003, p. 29). All activities in Core Copyright Industries are considered copyright-relevant, therefore 100% of the value added and employment should be assigned as a contribution to the national economy (WIPO, 2003).

Figure 2 presents the breakdown of subcategories of Core Copyright Industries. *Software and Databases* account for almost half of the value added, followed by *Press and Literature* and *Advertising*. These industries also stand out in terms of employment, as demonstrated by Figure 3, although the average number of people/FTEs that is required to generate the value added (i.e., the labour productivity) somewhat shifts the shares between the 9 subcategories of Core Copyright Industries.

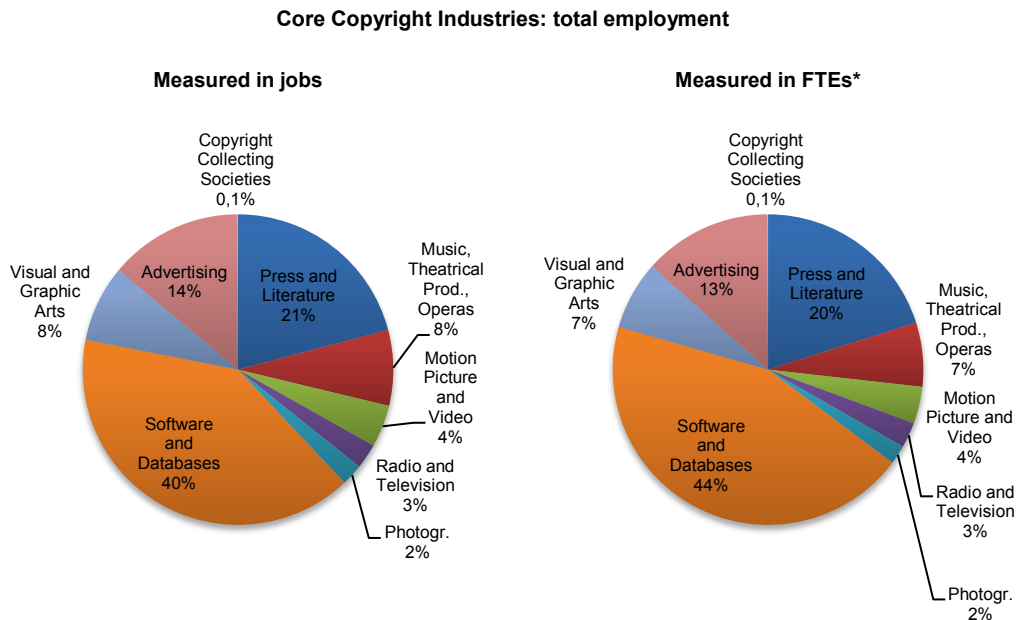
<sup>9</sup> For more information on data restrictions due to risk of disclosure of individual companies, see Box 3 of Appendix B.1.

Figure 2 **Software and Databases accounts for half of value added Core Industries**



Source: Analysis performed by SEO Economic Research using microdata concerning Production Statistics (PS) 2011 made available by *Statistics Netherlands*.

Figure 3 **Labour productivity shifts proportions between Core Industries subcategories**



Source: Analysis performed by SEO Economic Research using microdata concerning the Social Statistic File (SSB) 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

Being the heart of the economic contribution of copyright-relevant industries, the 9 categories of Core Copyright Industries are broken down further into economic activities in the following paragraphs.

### 2.2.1 Press and Literature

The second largest subcategory of Core Copyright Industries, *Press and Literature*, totals € 5.8 billion in value added (1.0% of the GDP) and 83,100 FTEs in employment (1.2% of total national employment). Pre-press, printing, and post-press of books, magazines and other printed material has the largest economic contribution, both in terms of value added and employment (Table 9).<sup>10</sup>

**Table 9** Value added and employment *Press and Literature*

<b>Economic activity</b>	<b>GVA at market prices (in million Euros)</b>	<b>Jobs (x 1,000)</b>	<b>FTEs* (x 1,000)</b>
Authors, writers, translators	499	13.0	10.1
Newspapers	858	13.6	11.0
News and feature agencies etc.	45	1.4	1.2
Magazines/periodicals	1,178	11.6	10.1
Book publishing and other published material <sup>^</sup>	690	9.5	8.0
Pre-press, printing, and post-press of books, magazines, newspapers, advertising materials	1,240	25.4	22.0
Wholesale and retail of press and literature (book stores, newsstands, etc.)	721	19.5	13.0
Libraries	538	10.9	7.8
<b>Total</b>	<b>5,768</b>	<b>105.0</b>	<b>83.1</b>

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people; ^ = Combination of two or more economic activities to prevent the risk of disclosure<sup>11</sup> of individual companies.

### 2.2.2 Music, Theatrical Productions and Operas

This subcategory has a value added of € 1.5 billion (0.3% of the GDP) and employs close to 40 thousand people (27.5 thousand FTEs, or 0.4% of the national employment). Largest economic contributors are performing arts (including allied agencies) and the operation of concert and theatre halls (including support activities).

<sup>10</sup> Some of the names of the economic activities in Table 9 and in other tables in Section 2.2 differ slightly from the descriptions in the WIPO Guide. This is the result of combining economic activities in order to prevent double counting of sector codes that are listed more than once within the same subcategory of Core Copyright Industries.

<sup>11</sup> For more detail on data restrictions due to risk of disclosure, see Box 3 in Appendix B.1.



**Table 10** Value added and employment *Music, Theatrical Productions and Operas*

<b>Economic activity</b>	<b>GVA at market prices (in million Euros)</b>	<b>Jobs (x 1,000)</b>	<b>FTEs* (x 1,000)</b>
Artistic creation (writers, performers, directors, etc.) <sup>^</sup>	226	5.5	4.0
Operation of concert and theatre halls (incl. support activities) <sup>^</sup>	409	11.8	7.3
Printing and publishing of music	78	2.1	1.7
Production/manufacturing of recorded music	23	0.5	0.3
Wholesale, retail and rentals of recorded music (sale and rental)	283	6.1	4.4
Performances and allied agencies (excl. support activities to performing arts <sup>‡</sup> )	521	13.7	9.8
<b>Total</b>	<b>1,539</b>	<b>39.6</b>	<b>27.5</b>

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people; ^ = Combination of economic activities to prevent double counting of sector codes listed twice or more within *Music, Theatrical Productions and Operas*; ‡ = Sector code excluded from economic activity to prevent double counting.

### 2.2.3 Motion Picture and Video

The Dutch motion picture and video industry totalled € 838 million in value added in 2011 (0.14% of the GDP) and close to 16 thousand FTEs in employment (Table 11). The economic activity *Motion picture and video production and distribution* accounts for approximately half of the economic contribution of *Motion Picture and Video*.

**Table 11** Value added and employment *Motion Picture and Video*

<b>Economic activity</b>	<b>GVA at market prices (in million Euros)</b>	<b>Jobs (x 1,000)</b>	<b>FTEs* (x 1,000)</b>
Writers, directors, actors	213	5.5	4.0
Motion picture and video production and distribution	436	10.6	8.7
Motion picture exhibition	119	4.0	1.8
Video rentals and sales, video on demand	48	1.5	0.9
Allied services	23	0.5	0.3
<b>Total</b>	<b>838</b>	<b>22.1</b>	<b>15.9</b>

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

### 2.2.4 Radio and Television

According to the statistical files, radio and television companies (including independent producers) accumulated € 1.1 billion in value added in 2011 (0.2% of the Dutch GDP) and employed 10.9 thousand FTEs. Radio and television broadcasting companies, primarily *national* broadcasting companies, are responsible for the lion's share of these figures (Table 12).

Table 12 Value added and employment *Radio and Television*

Economic activity	GVA at market prices (in million Euros)	Jobs (x 1,000)	FTEs* (x 1,000)
Television programme production activities	252	3.5	3.1
Radio and television broadcasting companies	824	8.7	7.1
Independent producers	68	0.8	0.7
<b>Total</b>	<b>1,144</b>	<b>13.1</b>	<b>10.9</b>

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

## 2.2.5 Photography

A total of 8,100 FTEs working in press and other types of photography contributed € 207 million in value added in 2011 (Table 13).

Table 13 Value added and employment *Photography*

Economic activity	GVA at market prices (in million Euros)	Jobs (x 1,000)	FTEs* (x 1,000)
Studios and commercial photography	207	11.2	8.1

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

## 2.2.6 Software and Databases

The largest subcategory of Core Copyright Industries, *Software and Databases*, totalled € 13.6 billion in value added in 2011 (49% of all Core Copyright Industries and 2.3% of the GDP) and 182,600 FTEs in employment (2.5% of total national employment). Within *Software and Databases*, programming, developing/designing and manufacturing is by far the biggest economic contributor, with 80% of the value added and 83% of employment.

Table 14 Value added and employment *Software and Databases*

Economic activity	GVA at market prices (in million Euros)	Jobs (x 1,000)	FTEs* (x 1,000)
Programming, development and design, manufacturing	10,812	167.1	152.4
Wholesale and retail prepackaged software (business programs, video games, educational programs etc.)	2,054	19.5	17.4
Database processing and publishing	748	15.0	12.7
<b>Total</b>	<b>13,614</b>	<b>201.7</b>	<b>182.6</b>

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

## 2.2.7 Visual and Graphic Arts

Close to 30 thousand FTEs in *Visual and Graphic Arts* generate € 1.8 billion in value added, of which design and artistic creation (including services related to printing) cover the majority of this economic contribution (Table 15).

**Table 15** Value added and employment *Visual and Graphic Arts*

<b>Economic activity</b>	<b>GVA at market prices (in million Euros)</b>	<b>Jobs (x 1,000)</b>	<b>FTEs* (x 1,000)</b>
Graphic design, visual artists and service activities related to printing <sup>^</sup>	1,327	27.8	21.7
Art galleries and other wholesale and retail	446	11.8	7.3
Picture framing and other allied services	31	0.7	0.5
<b>Total</b>	<b>1,804</b>	<b>40.3</b>	<b>29.6</b>

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people; ^ = Combination of economic activities to prevent double counting of sector codes listed twice within *Visual and Graphic Arts*.

## 2.2.8 Advertising

Advertising agencies and buying services (including marketing research) employed 55.1 thousand FTEs and amounted to € 2.7 billion in value added in 2011 (0.5% of the GDP).

**Table 16** Value added and employment *Advertising*

<b>Economic activity</b>	<b>GVA at market prices (in million Euros)</b>	<b>Jobs (x 1,000)</b>	<b>FTEs* (x 1,000)</b>
Agencies, buying services	2,701	69.6	55.1

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

## 2.2.9 Copyright Collecting Societies

The final subcategory of Core Copyright Industries, *Copyright Collecting Societies*<sup>12</sup> (hereafter also: CCSs), falls within sector code 94.12 *Professional membership organisations*. This sector code comprises *all* professional/trade associations, or federations of these associations (excluding trade unions). In other words, it is much broader than solely CCSs. Therefore it is a so-called ‘partial’ sector code: for current research purposes it is defined too broadly as it also encompasses activities that are not considered copyright-relevant by the WIPO. As was mentioned previously, ‘partial’ sector codes are by default fully included in the study outcomes and, as a robustness check of the study outcomes, left out completely (see Section 2.1 and Appendix B.3).

In the case of CCSs an exception was made and additional fieldwork was conducted. This was done for two reasons: because central, detailed information on the 17 Dutch Copyright Collecting Societies was available from sector association VOI©E, and because the overestimation of the economic contribution of the CCSs – being a Core Copyright Industry with a copyright factor of 100% – would be severe. To put the latter in perspective: the Dutch CCSs employ approximately 360 people (or 330 FTEs), on a total of 3,500 employees (2,900 FTEs) for all professional membership organisations (i.e., all organisations that fall within SBI code 94.12). In other words, using the ‘over-inclusive’ data from *Statistics Netherlands* would

<sup>12</sup> Also known as Collective Management Organisations (CMOs), Copyright Collectives, Copyright Collecting Agencies and Licensing Agencies. *Copyright Collecting Societies* is the term used by WIPO in the 2003 and upcoming updated version of the WIPO Guide.

overestimate the economic contribution of Copyright Collecting Societies by 10 times.<sup>13</sup> To be clear, these figures concern people who work for professional membership organisations and do *not* include their members.

Table 17 presents the outcomes of this additional research. As stated above, the CCSs employ 330 FTEs, who generate approximately € 22 million in value added.<sup>14</sup>

**Table 17** Value added and employment *Copyright Collecting Societies*

<b>Economic activity</b>	<b>GVA at market prices (in million Euros)</b>	<b>Jobs (x 1,000)</b>	<b>FTEs (x 1,000)</b>
Copyright Collecting Societies	22	0.4	0.3

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*, Factsheets 2012 VOI©E members (<http://www.voice-info.nl/voice/103434/>) and Annual Reports Dutch Copyright Collecting Societies; Adaptation by SEO Economic Research.

## 2.3 Interdependent Copyright Industries

Interdependent Copyright Industries, industries that are “engaged in production, manufacture and sale of equipment whose function is wholly or primarily to facilitate the creation, production or use of works and other protected subject matter” (WIPO, 2003, p. 33), have a two-sided relationship with Core Copyright Industries.

Whereas Core Copyright Industries are considered fully copyright-relevant, and therefore their economic contribution in terms of value added, employment and trade, Interdependent Copyright Industries – as well as the other ‘non-core’ industries Partial Copyright Industries and Non-Dedicated Support Industries – are not. Consequently, only a fraction of the value added, employment and trade in these industries is considered copyright-relevant. These fractions are called *copyright factors* and are assigned to each of the copyright-relevant industries. For example, a copyright factor of 25% means that one quarter of the industry is considered a part of the copyright-relevant economy. By weighing the economic output of Interdependent, Partial and Non-Dedicated Industries by copyright factors, the reported values for value added and employment no longer represent the *total* value added and employment of the sector codes in question, but merely that part that is considered copyright-relevant.

The WIPO (2003, p. 58-59) advises to use field research as much as possible to determine copyright factors for the Interdependent and Partial sectors. For the Netherlands, no such field research is available. Therefore, copyright factors used in this study are based on a careful selection of surveys in other countries. For more information on determining survey averages and the eventual copyright factors used, see Appendix B.2. Copyright factors for Interdependent

<sup>13</sup> A similar exercise was done in the previous study on Dutch copyright-relevant industries (Lecenheer *et al.*, 2008, p. 11).

<sup>14</sup> The value added of the CCSs was estimated the same way as for the other 9### SBI codes: by multiplying the number of FTEs by the weighted average labour productivity. See Appendix B.1 and footnote 39.

Copyright Industries vary from 25% to 32.5% (see Table 26, Appendix B.2), with an average copyright factor of 29.3%.<sup>15</sup>

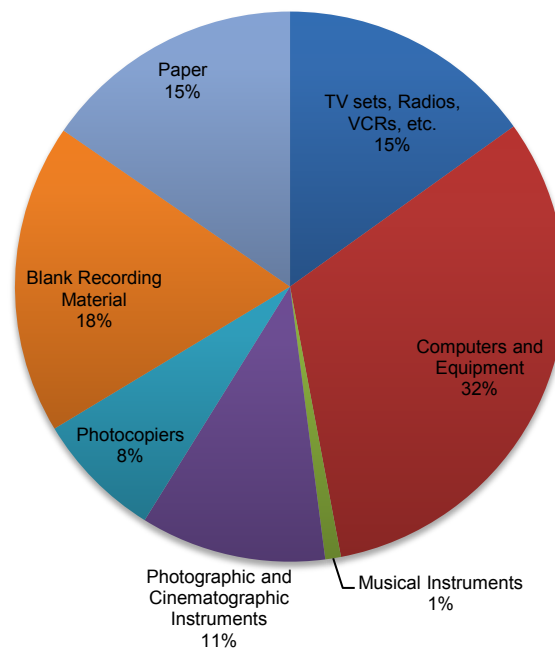
The – weighted – value added of Interdependent Copyright Industries equalled € 2.4 billion in 2011, or 0.4% of the national total. One third of this value added is accounted for by the manufacture, wholesale and retail of computers and equipment (Figure 4).

Note that Interdependent Copyright Industries include quite a few sectors that are considered only partially copyright-relevant by the WIPO (see Appendix A.2 and Appendix B.3). Excluding these sectors from the outcomes, as a matter of lower bound estimation of economic contribution of Interdependent Copyright Industries, reduces the value added to € 1.9 billion (a 22% decrease) and the employment in FTEs to 23 thousand (see Table 2 and Table 5).

**Figure 4** Manufacture, wholesale and retail of computers and equipment make up one third of value added Interdependent Copyright Industries

**Interdependent Copyright Industries: gross value added at market prices**

*Manufacture, wholesale and retail (sales/rental) of:*



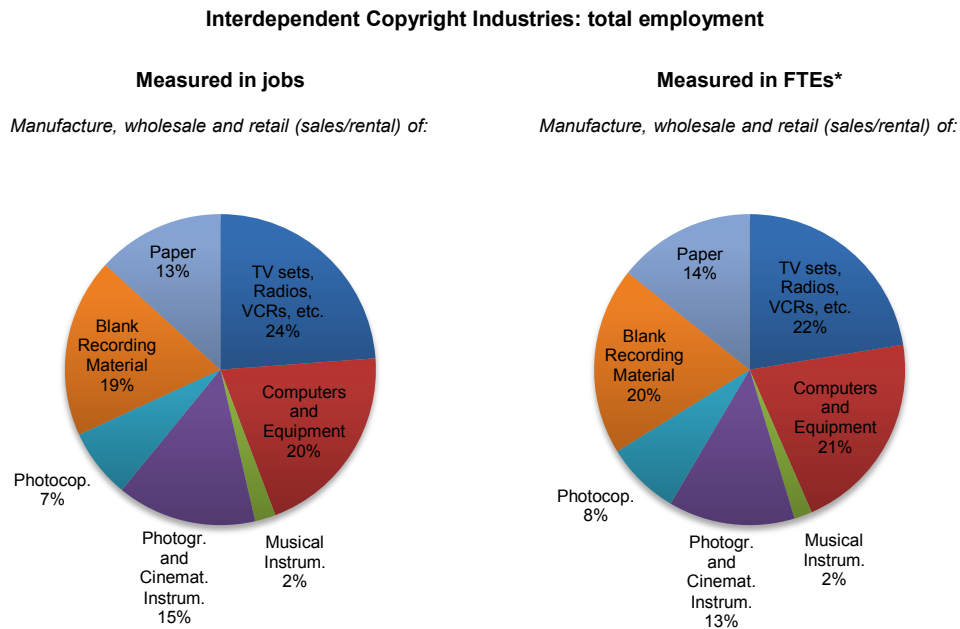
Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*.

The copyright-relevant employment of Interdependent Copyright Industries was 30.4 thousand FTEs (also 0.4% of the national total), or 35.1 thousand people. The relatively high labour productivity in computer and equipment manufacturing/wholesale/retail means that this industry does not have the highest share in the (attributed) employment. Instead, the production,

<sup>15</sup> The average is weighted using the value added. In other words: the weighted value added as a fraction of the unweighted value added.

wholesale and retail of audio and video equipment accounts for close to a quarter of the employment – 6,800 FTEs – in the Interdependent Copyright Industries (Figure 5).

**Figure 5** Production and wholesale/retail of audio/video equipment, computers and blank recording material cover 60% of copyright-relevant employment



Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

## 2.4 Partial Copyright Industries

For Partial Copyright Industries goes that only “a portion of [their] activities is related to works and other protected subject matter” (WIPO, 2003, p. 33). Accordingly, only a portion of their activities – and economic output – is considered copyright-relevant. This portion – i.e., the copyright factors – ranges from 0.9% to 44% (see Table 26, Appendix B.2), with an average copyright factor of 9.5%.<sup>16</sup>

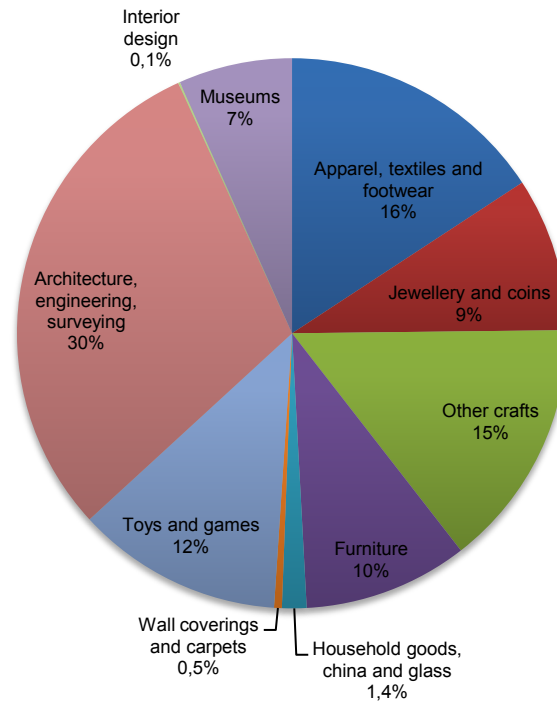
The – weighted – value added of Partial Copyright Industries accumulates to € 1.9 billion (0.3% of the Dutch GDP), of which the subcategory *Architecture, engineering, surveying* contributes close to one third (€ 564 million), making it the largest of the ten subcategories (Figure 6).

Similar to Interdependent Copyright Industries, Partial Copyright Industries include quite a few sectors that encompass economic activities that are not considered copyright-relevant by the WIPO (see Appendix A.2 and Appendix B.3). Excluding these sectors from the outcomes, reduces the value added of Partial Copyright Industries to € 1.1 billion (a 42% decrease) and the employment in FTEs to 23 thousand (see Table 2 and Table 5).

<sup>16</sup> See footnote 15.

Figure 6 Architecture/engineering dominant Partial Copyright Sector in terms of value added

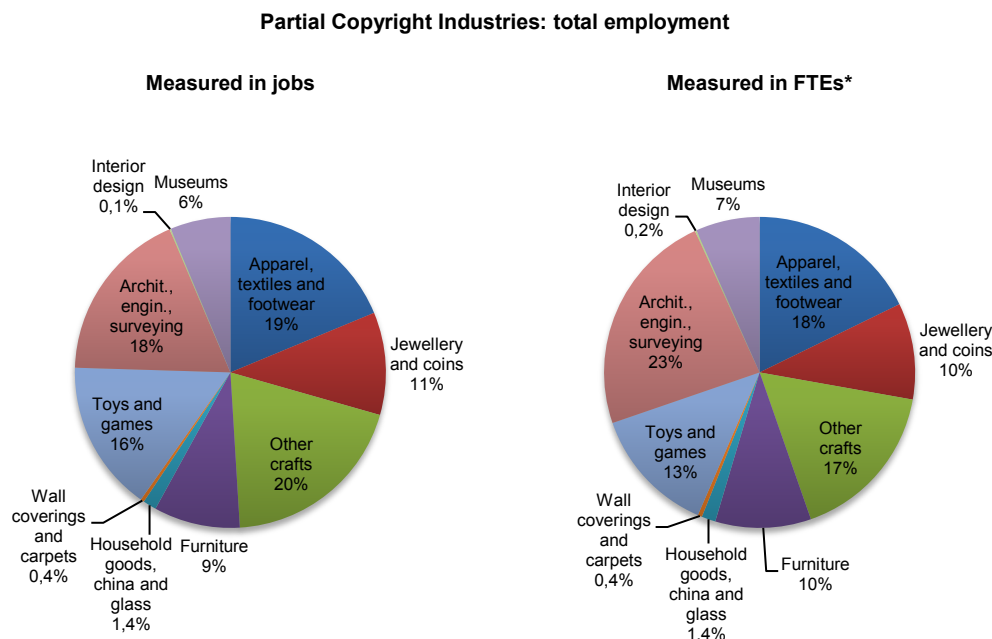
**Partial Copyright Industries: gross value added at market prices**



Source: Analysis performed by SEO Economic Research using microdata concerning Production Statistics (PS) 2011 made available by *Statistics Netherlands*.

The total copyright-relevant employment of 36 thousand FTEs in Partial Copyright Industries corresponds with 0.5% of the national employment. 8,4000 FTEs work in architecture/engineering, and around 6,000 each in *Apparel, textiles and footwear* and in *Other crafts* (Figure 7).

Figure 7 Breakdown of employment in Partial Copyright Industries



Source: Analysis performed by SEO Economic Research using microdata concerning the Social Statistic File (SSB) 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

## 2.5 Non-Dedicated Support Industries

The fourth and final category of copyright-relevant industries are the Non-Dedicated Support Industries (hereafter also: NDSIs). In these industries only “a portion of the activities is related to facilitating broadcast, communication, distribution or sales of works and other protected subject matter” (WIPO, 2003, p. 35). In a sense, Non-Dedicated Support Industries are a residual category: it covers copyright-relevant industries that are not classified previously as a Core, Interdependent or Partial Copyright Industry. They concern industries that do not relate to specific trade sectors, but instead facilitate numerous sectors.

Using the ratio between the value added of Core, Interdependent and Partial Copyright Industries and the non-tradable GDP<sup>17 18</sup> (known as the *WIPO formula*), the copyright factor for all NDSIs is determined at 6% (see Appendix B.2, in particular Table 25).

The Non-Dedicated Support Industries contribute a total of € 3.9 billion in copyright-relevant value added (0.6% of the GDP), and 49,000 FTEs in copyright-relevant employment (0.7% of

<sup>17</sup> The *non-tradable GDP* is the GDP minus the unweighted gross value added of the NDSIs.

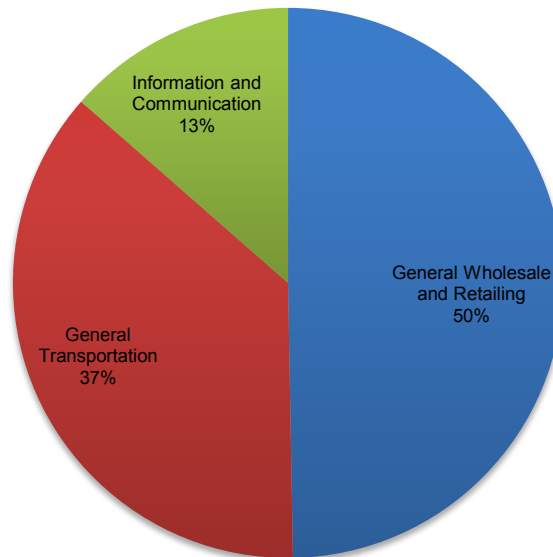
<sup>18</sup> According to the WIPO Guide, this ratio builds on the assumption that the proportionate contribution of copyright-relevant industries to the total distribution industry’s value added (i.e., trade and transportation) is the same percentage contribution of copyright-relevant industries to the total non-distribution industry (WIPO, 2003, p. 59).



the national total). Of these industries the subcategory *General Wholesale and Retailing* makes up (more than) half of the value added (Figure 8) and employment (Figure 9).<sup>19</sup>

**Figure 8 Wholesale and retailing cover half of value added NDSIs**

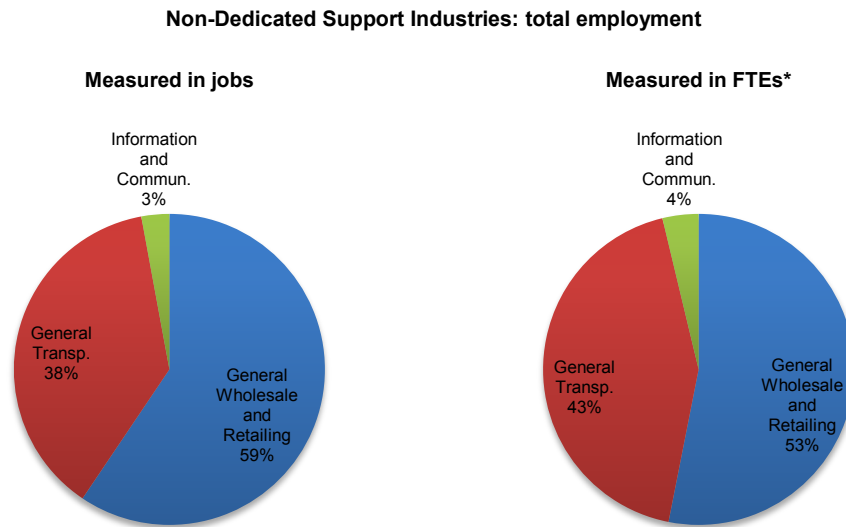
**Non-Dedicated Support Industries: gross value added at market prices**



Source: Analysis performed by SEO Economic Research using microdata concerning Production Statistics (PS) 2011 made available by *Statistics Netherlands*.

<sup>19</sup> Contrary to Core, Interdependent and Partial Copyright Industries, NDSIs do not include 'partial' sector codes. However, the copyright factor of NDSIs does decrease – from 6.0% to 5.4% – when 'partial' sector codes are omitted in the *WIPO formula*. As a result, the value added of NDSIs is reduced to € 3.5 billion and employment to 45,000 FTEs. See also Table 2, Table 5 and footnote 6.

Figure 9 Breakdown of employment in Non-Dedicated Support Industries



Source: Analysis performed by SEO Economic Research using microdata concerning the Social Statistic File (SSB) 2011 made available by *Statistics Netherlands*; \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

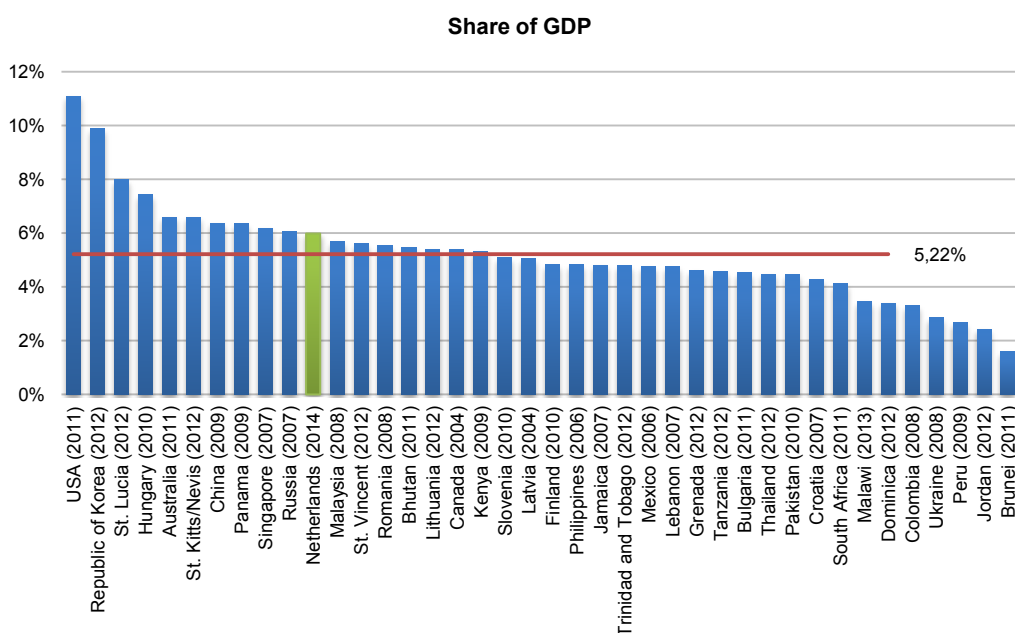
## 3 Comparison with Previous Research

### 3.1 International Studies

This section compares the study findings with outcomes of 39 studies in other countries that are also based on the WIPO Guide. These studies, although they have different measurement years, are assumed to be comparable to the present research.

The contribution of Dutch copyright-relevant industries to the Gross Domestic Product (6.0%) is slightly above the international average of 5.2%, see Figure 10. It should be noted that this outcome, as well as other international comparisons in this section, does not allow normative conclusions: a low rank is not necessarily 'bad', nor is a high rank necessarily 'good'. At best, these comparisons reveal the relative size of creative industries in the total economy. Normative comparison between countries is also inappropriate due to different measurement years (see the year of publication of the country studies between brackets in the figures) and methodological differences between studies, particularly the copyright factors used. Moreover, the current Dutch study uses a new selection of copyright-relevant sectors from the WIPO's upcoming revised guidelines – see also Section 3.2 and Appendix A. This makes this study less comparable with previous WIPO-based country studies.

Figure 10 GDP contribution Dutch copyright-relevant industries close to international average

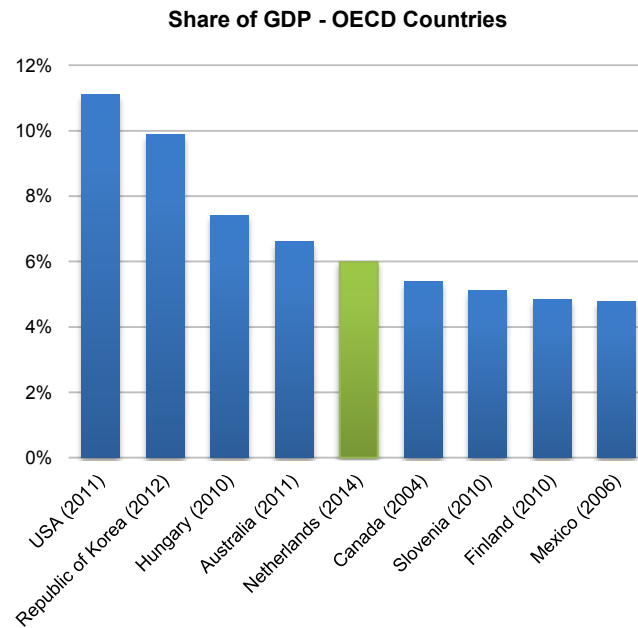


Source: WIPO (2013, p. 26) and SEO (2014); Between brackets: year of publication of country study.

Figure 10 reveals that the available studies are not only carried out in Western countries, but in many non-Western countries as well. From the European Union (EU) there are studies from Hungary, Romania, Lithuania, Slovenia, Latvia, Finland, Bulgaria and Croatia. Other European

country studies date from before the introduction of the WIPO Guide in 2003, including those of Germany (1989), Norway (2002), Sweden (1982) and the United Kingdom (1993), and are therefore not comparable with the present study. In total, there are nine WIPO studies from countries in the *Organisation for Economic Co-operation and Development* (OECD), including the current Dutch study. These countries are singled out in Figure 11. The graph shows that the value added of copyright-relevant industries in the Netherlands evens out between these nine countries. The average GDP contribution of the nine OECD countries is 6.8%.

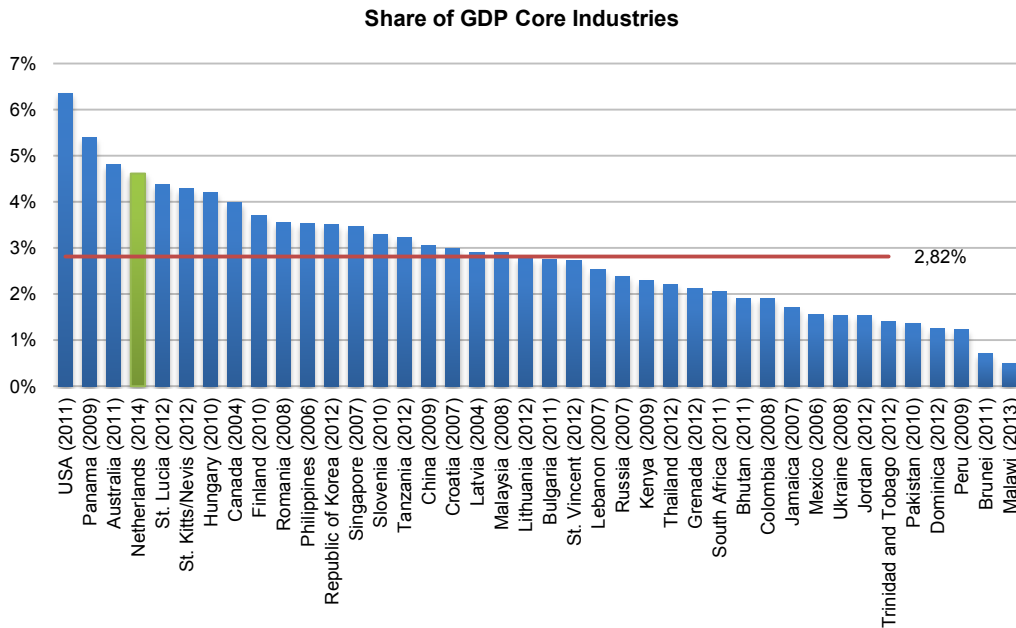
**Figure 11** Dutch GDP contribution also in OECD's middle bracket



Source: WIPO (2013, p. 26) and SEO (2014); Between brackets: year of publication of country study.

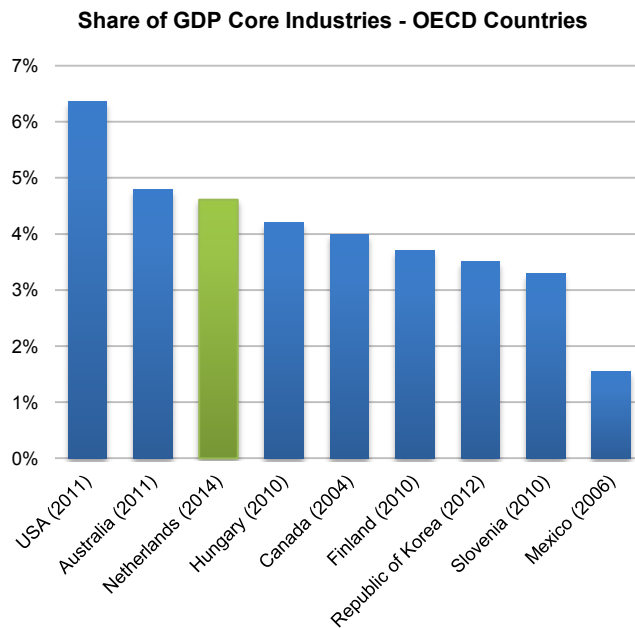
Differences in copyright factors used in these country studies result in different weighting of the value added, employment and trade balance. In other words, comparisons between countries can be ‘distorted’ by (significant) differences in underlying copyright factors. Therefore the comparisons in Figure 12 (all countries) and Figure 13 (OECD countries) are restricted to Core Copyright Industries, as these have the same copyright factor in all studies, namely 100%. Figure 12 shows that the share of Dutch Core Copyright Industries (4.6%) is quite a bit above the international average of all countries (2.8%). It is, however, very similar to OECD countries’ average of 4.0% (see Figure 13). This is an indication that the (relative) size of Core Copyright Industries is comparable with OECD member countries while different from countries outside the OECD. In other words, it appears that the composition of the economic contribution of copyright-relevant industries in OECD countries – i.e., the proportion between Core, Interdependent, Partial and Non-Dedicated Copyright Industries – stands out from the other countries.

Figure 12 Dutch Core Copyright Industries relatively large compared with all countries...



Source: WIPO (2013, p. 26) and SEO (2014); Between brackets: year of publication of country study.

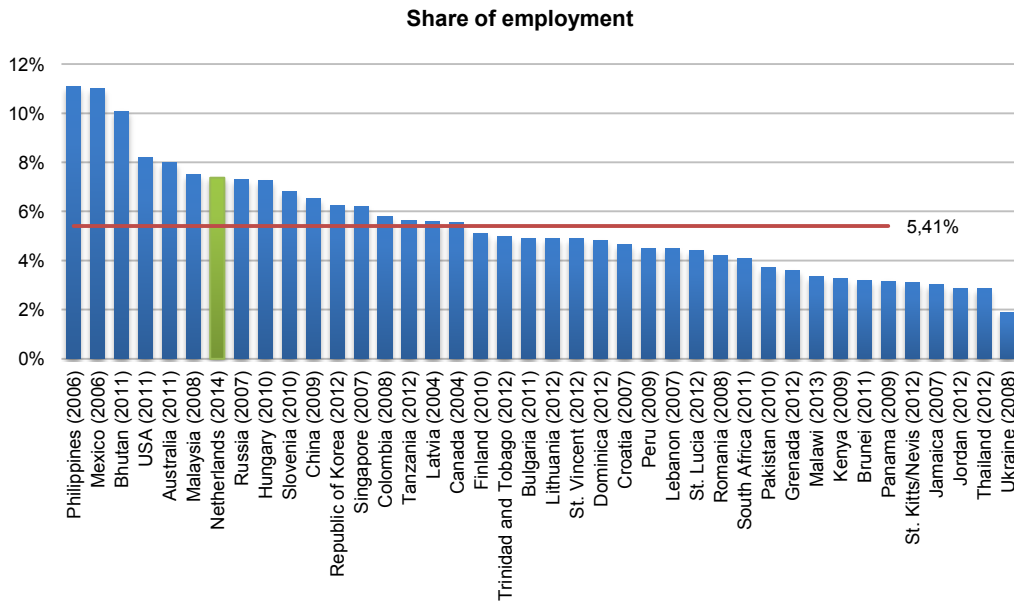
Figure 13 ...But very similar to the average of OECD countries



Source: WIPO (2013, p. 26) and SEO (2014); Between brackets: year of publication of country study.

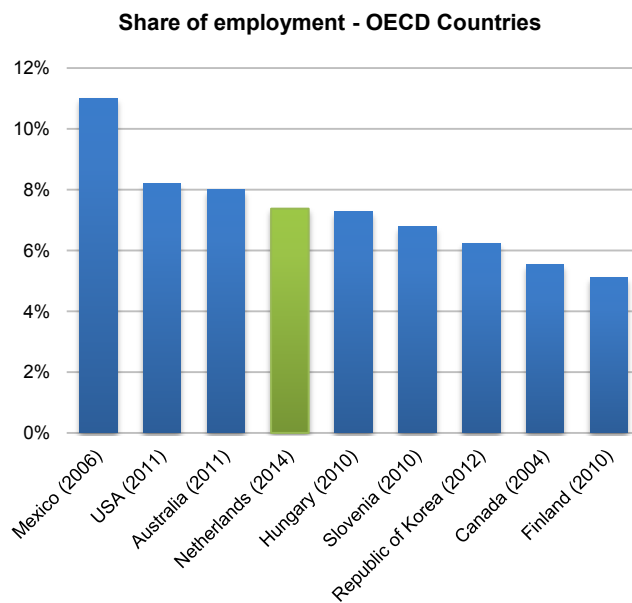
The share in national employment of Dutch copyright-relevant industries, 7.4% measured in FTEs, is two percentage points above the average of all 40 available country studies (Figure 14), but very similar to the average of the 9 OECD countries, which – including the current Dutch study – equals 7.3% (Figure 15).

**Figure 14 Dutch copyright-relevant industries have an above international average contribution to national employment\***



Source: WIPO (2013, p. 26) and SEO (2014); \* = Employment in SEO (2014) measured in FTEs; Between brackets: year of publication of country study.

**Figure 15 Dutch employment share also close to OECD countries average\***



Source: WIPO (2013, p. 26) and SEO (2014); \* = Employment in SEO (2014) measured in FTEs; Between brackets: year of publication of country study.

## 3.2 Previous Dutch Studies

The first Dutch study on the economic contribution of copyright-relevant industries dates from 1986. Measurement was most recently repeated in 2000, 2003 and 2008, all of which were (in part) carried out by SEO Economic Research. The latest of these (Leenheer *et al.*, 2008) was the first analysis that was based on the WIPO Guide and therefore most comparable to the current study. However, there are comparability issues with each of the previous studies, which are addressed in detail before proceeding to a longitudinal analysis of Dutch copyright-relevant industries' economic contribution.

Box 2 explains that there is watershed between the studies previous to and after the publication of the WIPO Guide in 2003. Dutch studies previous to the 2008 edition did not make use of the WIPO methodology, which makes comparison with these studies less meaningful. In addition, the new selection of copyright-relevant sectors in WIPO's upcoming revised guidelines interferes with comparisons between current and the most recent SEO study (Leenheer *et al.*, 2008), which was based on an earlier version of the WIPO Guide. That said, the outcomes of both studies are very similar (or, in statistical terms: reliable/consistent).

### Box 2 Previous Dutch copyright studies

#### *SEO 2000 (Budil et al., 2000)*

Commissioned by the Dutch Copyright Federation, the 2000 study on the economic contribution of copyright primarily focussed on what the WIPO calls Core Copyright Industries, albeit defined more broadly than the WIPO Guide does.<sup>20</sup> Comparison with the current study therefore excludes Interdependent, Partial and Non-Dedicated Copyright Industries. Furthermore, the 2000 study had to rely on a variety of sources, due to a lack of certain data at statistical agencies.

The researchers found that the value added of the Dutch copyright-relevant industries was € 17,385 million in 1998 (the measurement year in the study), which equalled 5.5% of the GDP. Copyright-related employment amounted to 338,481 FTEs, 5.5% of total Dutch employment.

#### *SEO/Dialogic 2003 (Baarsma et al., 2003)*

The SEO study from 2003 covered the so-called *multimedia cluster*, consisting of multimedia-enabling activities (e.g., software production, design and consultancy), digital distribution of content, content provision (e.g., broadcasting, entertainment and publishing) and e-marketing. As such, the scope of the 2003 study as well as the weighting of the outcomes<sup>21</sup> (i.e., the copyright factors) differ significantly from studies following the WIPO Guide.

Bearing in mind these limitations, the study showed that the value added of the multimedia cluster was € 25,105 million in 2000 (the measurement year in the study), or 6.8% of the Dutch GDP. Employment equalled 338,481 FTEs, or 6.2% of total Dutch employment.

<sup>20</sup> Also, the definition of Core Copyright Industries and its subcategories was slightly different.

<sup>21</sup> Although the 2003 study used copyright factors for the first time, these were very different from the copyright factors in the 2008 and current study. For instance, telecommunications had weight of 50% (against 6% in the current study) and the outcomes of architecture, engineering and surveying were fully counted (against a copyright factor of 8.1% in the current study).

*SEO 2008 (Leenbeer et al., 2008)*

The 2008 study was the first Dutch copyright study in accordance with the WIPO Guide and therefore most similar to the current study. However, comparison is somewhat hampered by the new selection of relevant industry codes in the WIPO's upcoming revised guidelines, which are the result of drastic revisions of international and national sector classifications (see Appendix A).<sup>22</sup> In the current study these upcoming revised guidelines are used for (one of) the first time(s). Moreover, the previous Dutch study could use only a handful of country studies that followed the WIPO Guide and on which copyright factors could be based. In the current study the copyright factors were adapted to the blooming body of empirical research that has since then emerged.

In 2005, the measurement year in the study, Dutch copyright-relevant industries contributed 5.9% to the GDP, or € 30,500 million. Employment, measured in FTEs, totalled at 567,214, which corresponded to 8.8% of total national employment.

**Table 18** Summary of the outcomes of previous Dutch copyright studies and the current study

Study	Subject	Value Added (% of GDP)	Employment (% of national)	Balance of trade
SEO 2000	Copyright (Core Industries)	5.5%	5.5%	€ 384 million
SEO 2003	'Multimedia cluster'	6.8%	6.2%	Not measured
SEO 2008	Copyright (WIPO definition*)	5.9%	8.8%	€ 2,355 million
SEO 2014	Copyright (WIPO definition*)	6.0%	7.4% <sup>^</sup>	€ 1,188 million

Source: SEO Economic Research; \* = Selection of copyright-relevant industries differs between 2008-study and 2014-study due to a revision of the WIPO Guide; <sup>^</sup> = Employment measured in FTEs.

Table 19 and Table 20 provide a more detailed comparison between both Dutch studies that are based on the WIPO Guide: the 2008 and the current edition. The total weighted value added of copyright-relevant industries was about € 6 billion higher in 2011 than in 2005 (see Table 19). This difference almost completely coincides with economic growth at large, as measured by the Gross Domestic Product: the growth of the copyright-relevant economy between 2005 and 2011 (17.6%) is nearly identical to growth of the Dutch GDP (16.7%). Since value added and the GDP are measured at market prices, this growth is partly the result of the increased price level: the accumulated inflation rate between 2005 and 2011 equals 10.4%.<sup>23</sup>

Despite the similarity of the total economic contribution in both studies, the proportions between copyright-relevant categories are different. There is an apparent shift between Core and Interdependent Copyright Industries: in the current study over three quarters of the value added is accounted for by the Core Copyright Industries and 7% by Interdependent Copyright

<sup>22</sup> Furthermore, the Appendices of the revised WIPO Guide introduce a new dimension in the form of the partiality (p) indicator: sector codes that include economic activities that are not considered copyright-relevant by the WIPO. Therefore the robustness checks performed in the current study (or: lower and upper bound estimations of economic contribution), which are based on this (p) indicator, are a novelty. See also Appendix A and Appendix B.3.

<sup>23</sup> Source: CBS *Statline*, <http://bit.ly/1fYh1j4>.



Industries, in the 2008 study this was 68% and 15%, respectively. The sharp decline in the value added of Interdependent Copyright Industries – and employment, as is shown by Table 20 – can be the result of the different sectoral demarcations in the old and revised WIPO guidelines, as well as actual shifts in the economy (i.e., economic growth in Core Copyright Industries and sharp recession in Interdependent Copyright Industries).<sup>24</sup> The latter explanation is supported by other studies on employment in creative industries in the Netherlands. For example, Rutten *et al.* (2012) show that employment in ICT hardware manufacturing – which makes up a large part of the Interdependent Copyright Industries (see Figure 4 and Figure 5) – decreased by almost 34 thousand jobs between 2000 and 2011. This is a decline of 5.9% per year, or 41.1% accumulated between 2005 and 2011. Between 2000 and 2010, hardware revenues – both manufacturing and installation, rental and repairs – declined by € 3.5 billion (a decline of 2.1% per year).<sup>25</sup> Although this to a large extent explains the sharp recession in Interdependent Copyright Industries, it cannot be ruled out that there are ‘artificial’ reasons for this decline as well – i.e., different sectoral delineations in 2011 compared with 2005.

**Table 19** Comparison of value added of copyright-relevant industries between 2011 and 2005

Category	Gross value added at market prices			
	In million Euros		% of GDP	
	2011	2005	2011	2005
Core Copyright Industries	27,639	20,605	4.6%	4.0%
Interdependent Copyright Industries	2,446	4,635	0.4%	0.9%
Partial Copyright Industries	1,878	1,930	0.3%	0.4%
Non-dedicated Support Industries	3,890	3,330	0.6%	0.6%
<b>Copyright-relevant industries</b>	<b>35,853</b>	<b>30,500</b>	<b>6.0%</b>	<b>5.9%</b>
<b>Total Dutch economy</b>	<b>599,047</b>	<b>513,407</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Analysis performed by SEO Economic Research using microdata concerning Production Statistics (PS) 2011 made available by *Statistics Netherlands* and Leenheer *et al.* (2008, p. 5).

Overall, employment in copyright-relevant industries has declined between 2005 and 2011, both in absolute terms (i.e., the number of full-time jobs) and in relative terms (i.e., as a percentage of total national employment). There is a notable decrease in the Interdependent Copyright Industries and Non-dedicated Support Industries. As discussed previously, this is likely the result of both actual economic downturn in these industries and differences between the industry classifications used in both studies.

<sup>24</sup> The shift between Core and Interdependent Copyright Industries cannot be explained by differences in the copyright factors used in both studies, as the new copyright factors are very similar to those used in the previous study (see Table 24 in Appendix B.2). An increase in the size of the Core Copyright Industries (which have a copyright factor of 100% in both studies) vis-à-vis the three other categories due to different copyright factors could only be the case if the Interdependent, Partial and/or Non-Dedicated Copyright Industries would have been weighted significantly lower in the current study. This is, however, not the case. This is also confirmed by the stable share of the Partial and Non-Dedicated Copyright Industries in the total value added.

<sup>25</sup> Revenues are corrected for inflation. The revenue decline for hardware *manufacturing* alone is likely even greater, since employment in hardware installation, rental and repairs *increased* between 2000 and 2010, by 2,303 jobs (an annual employment growth of 3.4%).

Table 20 Comparison of employment in copyright-relevant industries between 2011 and 2005

Category	Total employment in FTEs*		% of national employment *	
	2011	2005	2011	2005
Core Copyright Industries	413	399	5.8%	6.2%
Interdependent Copyright Industries	30	70	0.4%	1.1%
Partial Copyright Industries	36	37	0.5%	0.6%
Non-dedicated Support Industries	49	62	0.7%	1.0%
<b>Copyright-relevant industries</b>	<b>529</b>	<b>567</b>	<b>7.4%</b>	<b>8.8%</b>
<b>Total Dutch economy</b>	<b>7,167</b>	<b>6,478</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Analysis performed by SEO Economic Research using microdata concerning the Social Statistic File (SSB) 2011 made available by *Statistics Netherlands* and Leenheer *et al.* (2008, p. 6); \* = FTE data is not available for self-employed people, an estimation was made using the sectoral part-time factors of employed people.

## 4 Conclusions

Following the upcoming revised WIPO Guide, the economic contribution of Dutch copyright-relevant industries has been measured by three statistics: the gross value added (the value added to goods and services used in the production process), employment, and the balance of trade (exports minus imports). Using data from *Statistics Netherlands* for the most recent measurement year available for these three statistics, which is 2011, Table 21 summarises the results of the current study and puts them in a historical and international perspective. It does so by comparing them with the previous Dutch study based on the WIPO Guide (published in 2008, measurement year 2005) and WIPO-based studies from other countries (published between 2004 and 2014).

This is the first WIPO based copyright study that uses lower and upper bound estimates of economic contribution. The reason for this is the introduction of a ‘partial’ indicator in the upcoming revised WIPO Guide. This indicator denotes sector codes that cover both activities that the WIPO considers copyright-relevant and activities that it does not consider copyright-relevant. In other words, these sector codes are defined too broadly to accurately measure the economic activity that the WIPO considers copyright-relevant.<sup>26</sup> Statistical databases – by definition – do not offer empirical grounds to determine which part of these codes is copyright-relevant and which part is not (see also Appendix B.3). Therefore these so-called ‘partial’ sector codes are alternately both completely *included* and completely *excluded* in the study results, creating upper bound (‘partial’ sector codes are fully included) and lower bound (‘partial’ sector codes are fully excluded) estimates of value added, employment and trade balance. All studies previous to the revised WIPO Guide did not feature the ‘partial’ indicator and therefore fully included ‘partial’ sector codes. Therefore it is appropriate to compare the current *upper* bound estimates with previous national and international studies.

**Table 21** Summary of study outcomes and national and international comparison (values in million Euros, percentages refer to share in national economy)

	The Netherlands			International WIPO average	
	2011		2005	All countries*	OECD countries <sup>^</sup>
	Lower bound	Upper bound			2004-2014
Value added	32,733 (5.5%) - 35,853 (6.0%)		30,500 (5.9%)	5.2%	6.8%
Employment (FTEs)	480,000 (6.7%) - 529,000 (7.4%)		567,000 (8.8%)	5.4%	7.3%
Balance of trade	728 (1.6%) - 1,188 (2.7%)		2,355 (6.9%)	N/A	N/A

Source: WIPO (2013, p. 26); Leenheer *et al.* (2008) and SEO (2014); \* = Average of all 40 country studies based on the WIPO Guide, including the current Dutch study; <sup>^</sup> = Average of 9 OECD country studies based on the WIPO Guide, including the current Dutch study.

Although € 5.3 billion higher nominally, the percentage share in the GDP of copyright-relevant industries in the Netherlands is practically the same as it was 6 years previously (6.0% and 5.9%, respectively), suggesting that the economic growth of these industries is in line with national economic growth (i.e., GDP development). The percentage share in the GDP is slightly above

<sup>26</sup> ‘Partial’ sector codes refer to shortcomings in (the classification of) statistical databases and should not be confused with the *category* Partial Copyright Industries.

the international average but somewhat lower than the average of the nine OECD countries in scope.

Employment in the Dutch copyright-relevant industries, measured in full-time equivalents (FTEs), is lower than it was 6 years ago, both in absolute terms (a decrease of 38,000 full-time jobs) and as a percentage of total national employment (a decrease of 1.4 percentage points). Having said that, it is still above the average of all 40 countries that conducted WIPO-based copyright studies and almost equal to the average of the nine OECD countries covered. Overall, it is apparent from Table 21 – as well as from the breakdown of economic contribution between Core, Interdependent, Partial and Non-Dedicated Copyright Industries, see Paragraph 3.1 – that the WIPO-based studies from OECD countries stand out from the other country studies. Among other things, the Core Copyright Industries in OECD countries have a significantly higher share in the collective value added and employment of copyright-relevant industries than in countries outside the OECD.

There are notable differences between the development of economic contribution of the four categories of copyright-relevant industries. In particular, the Core Copyright Industries showed economic growth between 2005 and 2011 (in terms of value added and employment) while Interdependent Copyright Industries showed economic downturn. Studies on the Dutch creative industries indicate that is for a large part the result of economic decline in hardware manufacturing.

Company-level data on trade of tangible goods by copyright-relevant industries – i.e., excluding trade of services and non-tangible products such as digital formats – show that these industries export more than they import, resulting in a trade surplus of € 1.2 billion in 2011. The trade balance is remarkably lower than in 2005, whereas the total national trade balance increased by around 40% between 2005 and 2011.<sup>27</sup> This could reflect the previously mentioned economic downturn in manufacturing industries – more specifically the Interdependent Copyright Industries. It could also signify a shift towards a ‘service economy’ in the other copyright-relevant industries: trade of services and non-tangible products – both of which are not included in the trade data – gains importance at the expense of trade of tangible products.

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<sup>27</sup> Source: CBS *Statline*, <http://bit.ly/1hLDd3E>. The growth percentage does not take into account that there is trend break between trade data previous to 2008 and thereafter. From 2008 onwards *Statistics Netherlands* makes a different distinction between re-exports and transit trade and includes companies that before were unjustly left out of the trade statistics. As a result, exports prior to 2008 are underestimated compared with 2008 and afterwards. This artificially inflates the growth percentage, although *Statistics Netherlands* claims that on a national level the differences between old and new methodology are small (see <http://bit.ly/1hLEAPL>).

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## Appendix A Copyright-Relevant Industries

### Preamble: Revised Sector Classifications and ‘Shared’ and ‘Partial’ Indicators

To enable measurement of the economic contribution of copyright-relevant activities, the WIPO translates them into sector codes used in national and international statistical databases. In the WIPO Guide (2003, pp. 75-80) it does so by listing a number of copyright-relevant sectors according to the UN-based International Standard Industrial Classification (ISIC), revision 3.1 (hereafter: rev. 3.1). In Leenheer *et al.* (2008) these ISIC rev. 3.1 codes were translated to the harmonized European sector classification NACE<sup>28</sup>, rev. 1.1, which was used in European databases until 2008.<sup>29</sup>

In 2008 both ISIC and the sector classifications based on ISIC (i.a., NACE and SBI) were drastically revised. ISIC rev. 4 lead to NACE rev. 2 and *SBI 2008*, currently employed by *Eurostat* and *Statistics Netherlands* (CBS), respectively. WIPO has updated its list of copyright industries to match ISIC rev. 4 and provides with it a complete list of corresponding NACE rev. 2 codes. Both lists will be published in the upcoming revised guidelines and are used for (one of) the first time(s) in this study.<sup>30</sup>

In Annexes II and III of the updated WIPO Guide the listed ISIC and NACE codes have (s) and (p) indicators meaning they are ‘shared’ and/or ‘partial’, respectively. A ‘shared’ sector code is listed more than once, either *within* the same category of copyright-relevant industries (Core, Interdependent, Partial or Non-Dedicated Copyright Industries) or *in another* category of copyright-relevant industries.<sup>31</sup> A ‘partial’ sector is one that WIPO does not consider fully copyright-relevant. In other words, the sector code also envelopes economic activities that do not classify as copyright-relevant. **Note that ‘partial’ sector codes should not be confused with the category Partial Copyright Industries: ‘partial’ sector codes are the result of insufficient distinction between economic activities in industry taxonomies and occur in Core Copyright Industries, Interdependent Copyright Industries and Partial Copyright Industries.** Both indicators were cross-checked and corrections were made accordingly.<sup>32</sup>

<sup>28</sup> NACE stands for *Nomenclature statistique des Activités économiques dans la Communauté Européenne*.

<sup>29</sup> Statistics Netherlands (CBS) uses the SBI sector classification (*Standaard Bedrijfsindeling*), which is based on NACE. Until 2008, *SBI '93* was used. After the transition to ISIC rev. 4, and subsequently to NACE rev. 2, *SBI '93* became *SBI 2008*, which is currently used.

<sup>30</sup> The congruency between NACE and SBI is much higher than between ISIC and NACE. This implies that the best part of the interpretation to translate sector codes is already provided by WIPO. This is not only more efficient for researchers measuring the economic contribution of copyright-relevant industries, but should also result in less inconsistencies between the various European country studies. In particular, before the new Annex III, each European country had to make conversions from ISIC to the prevailing NACE-based national sector classification.

<sup>31</sup> For example, ISIC code 4649, *Wholesale of other household goods*, meets both criteria: it is listed more than once within Core Copyright Industries, more than once within Interdependent Copyright Industries, and more than once within Partial Copyright Industries.

<sup>32</sup> The (s) indicators were cross-checked by means of counting the number of occurrences of an ISIC/NACE code in the WIPO-tables: codes with multiple occurrences are labelled ‘shared’. The (p) indicators were cross-checked by making sure that an ISIC/NACE code is consistently listed as ‘partial’ or not: a sector code either includes activities that are not copyright-relevant, or it does not.

The tables in Appendix A.1 to Appendix A.4 list the ISIC (rev. 4) and NACE (rev. 2) codes of the copyright-relevant industries provided in Annexes II and III of the upcoming revised WIPO Guide. They also include the corrected ‘shared’ (s) and ‘partial’ (p) indicators and NACE (rev. 2) description. The translation to 4-digits and 5-digits SBI codes (*SBI 2008*, version 2013) was done using the structure table provided by *Statistics Netherlands* (CBS).<sup>33</sup> Note that SBI does not always provide a further breakdown into 5-digits codes and that 5-digits codes are only helpful if the overlying 4-digits codes are ‘shared’ and/or ‘partial’ (see Appendix B.3). The 5-digits SBI codes also have ‘shared’ (s) and ‘partial’ (p) indicators. The ‘shared’ (s) indicator is added by means of counting the number of occurrences of the 5-digits code (codes with multiple occurrences are labelled ‘shared’). The ‘partial’ (p) indicator is an assessment by SEO whether the 5-digits code also includes activities that are not copyright-relevant.<sup>34</sup>

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<sup>33</sup> See: <http://www.cbs.nl/nl-NL/menu/methoden/classificaties/overzicht/sbi/sbi-2008/default.htm>.

<sup>34</sup> In other words, the absence of a (p) indicator for the underlying 5-digits SBI code(s) signifies that partiality of the 4-digits code is solved by using the more detailed 5-digits SBI code(s). See Appendix B.3.



## Appendix A.1 Core Industries

### Press and Literature

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Authors, writers, translators	9000	90.03	90.03	(s) Artistic creation		
	7490	74.30	74.30	Translation and interpretation activities		
	8299	82.99	82.99	(p) Other business support service activities n.e.c. (incl. real-time, i.e. simultaneous, closed captioning of live television performances of meetings, conferences)	82.99.9	(p) Other business services n.e.c.
Newspapers	5813	58.13	58.13	Publishing of newspapers		
News and feature agencies etc.	6391	63.91	63.21	News agency activities		
Magazines/periodicals	5813	58.14	58.14	Publishing of journals and periodicals		
Book publishing	5811	58.11	58.11	Book publishing		
Cards, maps, directories and other published material	5812	58.12	-	Publishing of directories and mailing lists		
	5819	58.19	58.19	Other publishing activities		
Pre-press, printing, and post-press of books, magazines, newspapers, advertising materials	1811	18.11	18.11	Printing of newspapers		
	1811	18.12	18.12	(s) Other printing		
	1812	18.13	18.13	Pre-press and pre-media services		
	1812	18.14	18.14	Binding and related services		
	8219	82.19	82.19	Photocopying, document preparation and other specialized office support activities		
Wholesale and retail of press and literature (book stores, newsstands, etc.)	4649	46.49	46.49	(s, p) Wholesale of other household goods (incl. wholesale of stationery, books, magazines and newspapers)	46.49.7	Wholesale of paper and paperboard goods (not for packaging)
					46.49.8	Wholesale of books, magazines and other printed matter
	4761	47.61	47.61	Retail sale of books in specialized stores		
	4761	47.62	47.62	Retail sale of newspapers and stationary in specialized stores		
	7729	77.29	77.29	(s, p) Renting and leasing of other personal and household goods (incl. books, journals and magazines)	77.29.1	Renting of magazines
				77.29.9	(s, p) Renting of other consumer goods n.e.c.	
Libraries	9101	91.01	91.01	Library and archives activities		

(s) Sector code shared between several copyright-relevant industries; (p) Sector code includes economic activities that are not copyright-relevant; - Nonexistent SBI code.

## Music, Theatrical Productions and Operas

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Composers, lyricists, arrangers	9000	90.03	90.03 (s)	Artistic creation		
Choreographers, writers	9000	90.03	90.03 (s)	Artistic creation		
Directors, performers and other personnel	9000	90.03	90.03 (s)	Artistic creation		
Artistic and literary creation and interpretation	9000	90.03	90.03 (s)	Artistic creation		
Support activities to performing arts and operation of concert and theatre halls	9000	90.02	90.02 (s)	Support activities to performing arts		
	9000	90.04	90.04 (s)	Operation of arts facilities		
Printing and publishing of music	5920	59.20	59.20	Sound recording and music publishing activities		
Production/manufacturing of recorded music	1820	18.20	18.20 (s)	Reproduction of recorded media		
Wholesale, retail and rentals of recorded music (sale and rental)	4649	46.43	46.43 (s, p)	Wholesale of electrical household goods (incl. wholesale of recorded audio, CDs)	46.43.5 (s)	Wholesale of video and music recordings
	4649	46.49	46.49 (s, p)	Wholesale of other household goods (incl. wholesale of musical instruments)	46.49.5 (s)	Wholesale of musical instruments
	4762	47.63	47.63 (s)	Retail sale of music and video recordings in specialised stores		
	7722	77.22	77.22 (s)	Renting of video tapes and disks		
	7729	77.29	77.29 (s, p)	Renting and leasing of other personal and household goods (incl. jewellery, musical instruments, scenery and costumes)	77.29.2 (s, p)	Renting of clothing and household goods
					77.29.9 (s, p)	Renting of other consumer goods n.e.c.
Operation of concert and theatre halls	9000	90.04	90.04 (s)	Operation of arts facilities		
Performances and allied agencies (bookings, ticket agencies, etc.)	9000	90.01	90.01 (s)	Performing arts		
	9000	90.02	90.02 (s)	Support activities to performing arts		
	7990	79.90	79.90 (s)	Other reservation service and related activities (incl. ticket sales activities for theatrical, sports and other amusement and entertainment events)		

(s) Sector code shared between several copyright-relevant industries; (p) Sector code includes economic activities that are not copyright-relevant.

## Motion Picture and Video

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Writers, directors, actors	9000	90.03	90.03 (s)	Artistic creation		
Motion picture and video production and distribution	5911	59.11	59.11 (s)	Motion picture, video and television programme production activities	59.11.1	Motion picture production (not for television)
	5912	59.12	59.12 (s)	Motion picture, video and television programme post-production activities		
	5913	59.13	59.13 (s)	Motion picture, video and television programme distribution activities		
Motion picture exhibition	5914	59.14	59.14	Motion picture projection activities		
Video rentals and sales, video on demand	7722	77.22	77.22 (s)	Renting of video tapes and disks		
	4649	46.43	46.43 (s, p)	Wholesale of electrical household appliances (incl. wholesale of DVDs)	46.43.5 (s)	Wholesale of video and music recordings
	4762	47.63	47.63 (s)	Retail sale of music and video recordings in specialized Stores		
Allied services	1820	18.20	18.20 (s)	Reproduction of recorded media		

(s) Sector code shared between several copyright-relevant industries; (p) Sector code includes economic activities that are not copyright-relevant.

## Radio and Television

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Television programme production activities	5911	59.11	59.11 (s)	Motion picture, video and television programme production activities	59.11.2 (s)	Television programme production
	5912	59.12	59.12 (s)	Motion picture, video and television programme post-production activities		
	5913	59.13	59.13 (s)	Motion picture, video and television programme distribution activities		
National radio and television broadcasting companies	6010	60.10	60.10	Radio broadcasting		
	6020	60.20	60.20	Television programming and broadcasting activities		
Independent producers	5911	59.11	59.11 (s)	Motion picture, video and television programme production activities	59.11.2 (s)	Television programme production

(s) Sector code shared between several copyright-relevant industries.

## Photography

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Studios and commercial photography	7420	74.20	74.20 (s)	Photographic activities	74.20.1	Photography

(s) Sector code shared between several copyright-relevant industries.

## Software and Databases

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Programming, development and Design, manufacturing	5820	58.21	58.21	Publishing of computer games		
	5820	58.29	58.29	Other software publishing		
	6201	62.01	62.01	Computer programming activities		
	6202	62.02	62.02	Computer consultancy and computer facilities management activities		
	6202	62.03	62.03	Computer facilities management activities		
	6209	62.09	62.09	(p) Other information technology and computer service activities		
Wholesale and retail prepackaged software (business programs, video games, educational programs etc.)	4651	46.51	46.51	(s) Wholesale of computers, computer peripheral equipment and software		
	4741	47.41	47.41	(s) Retail sale of computers,... (incl. retail sale of non-customised software, including video games)		
Database processing and publishing	6311	63.11	63.11	Data processing, hosting and related activities		
	6312	63.12	63.12	Web portals		

(s) Sector code shared between several copyright-relevant industries; (p) Sector code includes economic activities that are not copyright-relevant.

## Visual and Graphic Arts

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Artists	9000	90.01	90.01	(s) Performing arts		
	9000	90.03	90.03	(s) Artistic creation		
Art galleries and other wholesale and retail	9000	90.02	90.02	(s) Support activities to performing arts		
	9000	90.04	90.04	(s) Operation of arts facilities		
Picture framing and other allied services	7420	74.20	74.20	(s) Photographic activities	74.20.2	Photo shops
					74.20.3	Photo and film developing laboratories
Service activities related to printing	1812	18.12	18.12	(s) Other printing		
Graphic design	9000	90.03	90.03	(s) Artistic creation		
	1812	18.12	18.12	(s) Other printing (incl. artistic work)		
	7410	74.10	74.10	(s) Specialized design activities (incl. graphic designers)		

(s) Sector code shared between several copyright-relevant industries.

## Advertising

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Agencies, buying services	7310	73.11	73.11	Advertising agencies		
	7320	73.20	73.20 (p)	Market research and public opinion polling (incl. marketing studies)		

(p) Sector code includes economic activities that are not copyright-relevant.

## Copyright Collecting Societies

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Copyright Collecting Societies	9412	94.12	94.12 (p)	Activities of professional membership organizations (incl. associations of specialists engaged in cultural activities)		

(p) Sector code includes economic activities that are not copyright-relevant.

## Appendix A.2 Interdependent Copyright Industries

Manufacture, wholesale and retail (sales/rental) of:	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
TV sets, Radios, VCRs, CD Players, DVD Players, Cassette Players, Electronic Game Equipment, and other similar equipment	2630	26.30	26.30	(p) Manufacture of communication equipment (incl. radio and TV studio and broadcasting equip.)		
	2640	26.40	26.40	Manufacture of consumer electronics (includes TVs, VCRs, DVDs, Hi-Fis, Consoles, ...)		
	4649	46.43	46.43	(s, p) Wholesale of electrical household appliances (incl. radio and television equipment)	46.43.3	Wholesale of audio and video equipment
	4649	46.49	46.49	(s, p) Wholesale of other household goods	46.49.4	(s) Wholesale of toys
	4742	47.43	47.43	Retail sale of audio and video equipment in specialized stores		
	7729	77.29	77.29	(s, p) Renting and leasing of other personal and household goods (incl. relevant electronic equipment for household use)	77.29.2	(s, p) Renting of clothing and household goods
	7730	77.39	77.39	(s, p) Renting and leasing of other machinery, equipment and tangible goods (incl. profess. radio and TV equip., ...)	77.39.9	(s, p) Renting and leasing of other machinery and equipment and of other goods (no vending and slot machines)
Computers and Equipment	2620	26.20	26.20	Manufacture of computers and peripheral equipment		
	4651	46.51	46.51	(s) Wholesale of computers, computer peripheral equipment and software		
	4741	47.41	47.41	(s) Retail sale of computers, peripheral units, software and telecommunications equipment in specialized stores		
	7730	77.33	77.33	(p) Renting and leasing of other machinery, equipment and tangible goods (incl. computers and computer peripheral equipment)		
Musical Instruments	3220	32.20	32.20	Manufacture of musical instruments		
	4649	46.49	46.49	(s, p) Wholesale of other household goods (incl. musical instruments)	46.49.5	(s) Wholesale of musical instruments
	4759	47.59	47.59	(s, p) Retail sale of furniture, lighting equipment and other household articles in specialised stores (incl. musical instruments)	47.59.4	Shops selling musical instruments
	7729	77.29	77.29	(s, p) Renting and leasing of other personal and household goods (incl. instruments, scenery and costumes)	77.29.2	(s, p) Renting of clothing and household goods
Photographic and Cinematographic Instruments	2670	26.70	26.70	(p) Manufacture of optical instruments and photographic equipment		
	4649	46.43	46.43	(s, p) Wholesale of electrical household appliances (incl. photographic and optical goods)	46.43.4	Wholesale of photographic goods
	4773	47.78	47.78	(p) Other retail sale of new goods in specialized stores (incl. photographic, optical and precision equipment)	47.78.1	Shops selling photographic equipment
					47.78.2	(p) Shops selling optical articles
	7730	77.39	77.39	(s, p) Renting and leasing of other machinery, equipment and tangible goods n.e.c. (incl. motion picture production equipment)	77.39.9	(s, p) Renting and leasing of other machinery and equipment and of other goods (no vending and slot machines)

<b>Manufacture, wholesale and retail (sales/rental) of:</b>	<b>ISIC</b>	<b>NACE</b>	<b>SBI 4d</b>	<b>Description (NACE)</b>	<b>SBI 5d</b>	<b>Description (SBI 5d)</b>
Photocopiers	2817	28.23	28.23	(p) Manufacture of office machinery and equipment (incl. photocopier machines)		
	4659	46.66	46.66	(p) Wholesale of other machinery and equipment (incl. office machinery and equipment)		
Blank Recording Material	2680	26.80	26.80	Manufacture of magnetic and optical media		
	4652	46.52	46.52	(p) Wholesale of electronic and telecommunications equipment and parts (incl. blank material)		
Paper	1701	17.11	17.11	Manufacture of pulp		
	1701	17.12	17.12	Manufacture of paper and paperboard		
	1702	17.21	17.21	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard		
	1709	17.22	17.22	Manufacture of household and sanitary goods and of toilet requisites		
	1709	17.23	17.23	Manufacture of paper stationery		
	1709	17.29	17.29	Manufacture of other articles of paper and paperboard		

(s) Sector code shared between several copyright-relevant industries; (p) Sector code includes economic activities that are not copyright-relevant.

## Appendix A.3 Partial Copyright Industries

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Apparel, textiles and footwear	1410	14.11	14.11	Manufacture of leather clothes		
	1410	14.12	14.12	Manufacture of workwear		
	1410	14.13	14.13	Manufacture of other outerwear		
	1410	14.14	14.14	Manufacture of underwear		
	1410	14.19	14.19	Manufacture of other wearing apparel and accessories		
	1392	13.92	13.92	Manufacture of made-up textile articles, except apparel		
	1520	15.20	15.20	Manufacture of footwear		
	4641	46.41	46.41	Wholesale of textiles		
	4641	46.42	46.42	Wholesale of clothing and footwear		
	4751	47.51	47.51	Retail sale of textiles in specialized stores		
	4771	47.71	47.71	Retail sale of clothing in specialised stores		
	4771	47.72	47.72	Retail sale of footwear and leather goods in specialised stores		
	Jewellery and coins	7410	74.10	74.10	(s) Specialized design activities	
3211		32.11	32.11	Striking of coins		
3211		32.12	32.12	Manufacture of jewellery and related articles		
3212		32.13	32.13	Manufacture of imitation jewellery and related articles		
4649		46.48	46.48	Wholesale of watches and jewellery		
4719		47.19	47.19	(s, p) Other retail sale in non-specialized stores (incl. jewellery)		
4773		47.77	47.77	Retail sale of watches and jewellery in specialised stores		
Other crafts	7410	74.10	74.10	(s) Specialized design activities		
	9499	94.99	94.99	(p) Activities of other membership organizations n.e.c. (incl. craft and collectors' clubs)	94.99.1 (p)	Social clubs
					94.99.2	Hobby clubs
					94.99.4	Circles of friends in the field of culture
	4719	47.19	47.19	(s, p) Other retail sale in non-specialized stores (incl. handicrafts)		
	4759	47.59	47.59	(s, p) Retail sale of furniture, lighting equipment and other household articles in specialised stores (incl. handicrafts)	47.59.3 (s)	Shops selling various home furnishings
					47.59.5 (s)	Shops selling glassware, china and pottery
					47.59.6 (s, p)	Specialised shops selling other household goods n.e.c.
					47.59.7 (s, p)	Non specialised shops selling household articles
	7410	74.10	74.10	(s) Specialized design activities		



Economic activity	ISIC	NACE	SBI 4d	Description (NACE)	SBI 5d	Description (SBI 5d)
Furniture	3100	31.01	31.01	Manufacture of office and shop furniture		
	3100	31.02	31.02	Manufacture of kitchen furniture		
	3100	31.03	31.03	Manufacture of mattresses		
	4649	46.47	46.47	(p) Wholesale of furniture, carpets and lighting equipment	46.47.1	Wholesale of home furniture
	4719	47.19	47.19	(s, p) Other retail sale in non-specialized stores (incl. furniture)		
	4759	47.59	47.59	(s, p) Retail sale of furniture, lighting equipment and other household articles in specialised stores	47.59.1	Shops selling furniture
	7410	74.10	74.10	(s) Specialized design activities		
	7729	77.29	77.29	(s, p) Renting and leasing of other personal and household goods (incl. furniture)	77.29.2	(s, p) Renting of clothing and household goods
Household goods, china and glass	2310	23.11	23.11	(p) Manufacture of flat glass		
	2310	23.12	23.12	(p) Shaping and processing of flat glass		
	2310	23.13	23.13	(p) Manufacture of hollow glass		
	2310	23.14	23.14	(p) Manufacture of glass fibres		
	2310	23.19	23.19	(p) Manufacture and processing of other glass, including technical glassware		
	1391	13.91	13.91	(p) Manufacture of knitted and crocheted fabrics		
	1430	14.31	14.31	Manufacture of knitted and crocheted hosiery		
	1430	14.39	14.39	Manufacture of other knitted and crocheted apparel		
	1629	16.29	16.29	(p) Manufacture of other products of wood		
	2599	25.99	25.99	(p) Manufacture of other fabricated metal products n.e.c.		
	4649	46.44	46.44	(p) Wholesale of china and glassware and cleaning materials	46.44.1	Wholesale of glassware, china and pottery
	4752	47.52	47.52	(p) Retail sale of hardware, paints and glass in specialized stores		
	4759	47.59	47.59	(s, p) Retail sale of furniture, lighting equipment and other household articles in specialised stores	47.59.2	Shops selling articles for lighting
					47.59.3	(s) Shops selling various home furnishings
					47.59.5	(s) Shops selling glassware, china and pottery
					47.59.6	(s, p) Specialised shops selling other household goods n.e.c.
					47.59.7	(s, p) Non specialised shops selling household articles
	7410	74.10	74.10	(s) Specialized design activities		
Wall coverings and carpets	1393	13.93	13.93	(p) Manufacture of carpets and rugs		
	1709	17.24	17.24	Manufacture of wallpaper		
	4753	47.53	47.53	Retail sale of carpets, rugs, wall and floor coverings in specialized stores		
	7410	74.10	74.10	(s) Specialized design activities		

<b>Economic activity</b>	<b>ISIC</b>	<b>NACE</b>	<b>SBI 4d</b>	<b>Description (NACE)</b>	<b>SBI 5d</b>	<b>Description (SBI 5d)</b>
Toys and games	3240	32.40	32.40	Manufacture of games and toys		
	4649	46.49	46.49	(s, p) Wholesale of other household goods (incl. toys)	46.49.4 (s)	Wholesale of toys
	4719	47.19	47.19	(s, p) Other retail sale in non-specialized stores (incl. toys)		
	4764	47.65	47.65	Retail sale of games and toys in specialized stores		
	7410	74.10	74.10	(s) Specialized design activities		
Architecture, engineering, surveying	7110	71.11	71.11	Architectural activities		
	7110	71.12	71.12	(p) Engineering activities and related technical consult		
Interior design	7410	74.10	74.10	(s) Specialized design activities (incl. interior decorators)		
Museums	9102	91.02	91.02	Museums activities		
	9102	91.03	91.03	(p) Operation of historical sites and buildings and similar visitor attractions		

(s) Sector code shared between several copyright-relevant industries; (p) Sector code includes economic activities that are not copyright-relevant.

## Appendix A.4 Non-Dedicated Support Industries<sup>35</sup>

### General Wholesale and Retailing

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)
Wholesale on a fee or contract basis	4610	46.11	46.11	Agents involved in the sale of agricultural raw materials, live animals, textile raw materials and semi-finished goods
	4610	46.12	46.12	Agents involved in the sale of fuels, ores, metals and industrial chemicals
	4610	46.13	46.13	Agents involved in the sale of timber and building materials
	4610	46.14	46.14	Agents involved in the sale of machinery, industrial equipment, ships and aircraft
	4610	46.15	46.15	Agents involved in the sale of furniture, household goods, hardware and iron-mongery
	4610	46.16	46.16	Agents involved in the sale of textiles, clothing, fur, footwear and leather goods
	4610	46.17	46.17	Agents involved in the sale of food, beverages and tobacco
	4610	46.18	46.18	Agents specialised in the sale of other particular products
	4610	46.19	46.19	Agents involved in the sale of a variety of goods
	Wholesale of household goods (non incl. in other CBIs)	4649	46.45	46.45
4649		46.46	46.46	Wholesale of pharmaceutical goods
Wholesale of machinery, equipment and supplies... (non included in other CBIs)	4653	46.61	46.61	Wholesale of agricultural machinery, equipment and supplies
	4659	46.62	46.62	Wholesale of machine tools
	4659	46.63	46.63	Wholesale of mining, construction and civil engineering machinery
	4659	46.64	46.64	Wholesale of machinery for the textile industry and of sewing and knitting machines
	4659	46.65	46.65	Wholesale of office furniture
	-	-	46.68	Wholesale of printing and bookbinding machines and machines for food and beverage processing
	4659	46.69	46.69	Wholesale of other machinery and equipment

<sup>35</sup> The sector codes listed as Non-Dedicated Support Industries in the WIPO Guide do not have 'partial' (p) indicators. Furthermore, these industries are often the residual 4-digits codes of (3-digits) divisions previously listed as Core, Interdependent and/or Partial Copyright Industries – as indicated by the phrase “non included in other CBIs” in the WIPO Guide – and therefore are not 'shared' (s). As a result, there is no need for a further breakdown into 5-digits SBI codes.

<b>Economic activity</b>	<b>ISIC</b>	<b>NACE</b>	<b>SBI 4d</b>	<b>Description (NACE)</b>
Other specialized wholesale	4661	46.71	46.71	Wholesale of solid, liquid and gaseous fuels and related products
	4662	46.72	46.72	Wholesale of metals and metal ores
	4663	46.73	46.73	Wholesale of wood, construction materials and sanitary equipment
	4663	46.74	46.74	Wholesale of hardware, plumbing and heating equipment and supplies
	4669	46.75	46.75	Wholesale of chemical products
	4669	46.76	46.76	Wholesale of other intermediate products
	4669	46.77	46.77	Wholesale of waste and scrap
Retail sale in non-specialized stores (non incl. in other CBIs)	4711	47.11	47.11	Retail sale in non-specialised stores with food, beverages or tobacco predominating
Retail sale of information and communication equipment in specialised stores (non incl. in other CBIs)	4741	47.42	47.42	Retail sale of telecommunications equipment in specialised stores
Retail sale of other household equipment in specialised stores (non incl. in other CBIs)	4759	47.54	47.54	Retail sale of electrical household appliances in specialised stores
Retail sale of cultural and recreation goods in specialised stores (non incl. in other CBIs)	4763	47.64	47.64	Retail sale of sporting equipment in specialised stores
Retail sale of other goods in specialized stores (non included in other CBIs)	4772	47.73	47.73	Dispensing chemist in specialised stores
	4772	47.74	47.74	Retail sale of medical and orthopaedic goods in specialised stores
	4772	47.75	47.75	Retail sale of cosmetic and toilet articles in specialised stores
	4773	47.76	47.76	Retail sale of flowers, plants, seeds, fertilisers, pet animals and pet food in specialised stores
	4774	47.79	47.79	Retail sale of second-hand goods in stores
Retail sale via stalls and markets	4781	47.81	47.81	Retail sale via stalls and markets of food, beverages and tobacco products
	4782	47.82	47.82	Retail sale via stalls and markets of textiles, clothing and footwear
	4789	47.89	47.89	Retail sale via stalls and markets of other goods
Retail trade not in stores, stalls or markets	4791	47.91	47.91	Retail sale via mail order houses or via Internet
	4799	47.99	47.99	Other retail sale not in stores, stalls or markets

## General Transportation

Economic activity	ISIC	NACE	SBI 4d	Description (NACE)
Land transport; transport via pipelines	4911	49.10	49.10	Passenger rail transport, interurban
	4912	49.20	49.20	Freight rail transport
	4921	49.31	49.31	Urban and suburban passenger land transport
	4922	49.32	49.32	Taxi operation
	4922	49.39	49.39	Other passenger land transport n.e.c.
	4923	49.41	49.41	Freight transport by road
	4923	49.42	49.42	Removal services
	4930	49.50	49.50	Transport via pipeline
Water transport	5011	50.10	50.10	Sea and coastal passenger water transport
	5012	50.20	50.20	Sea and coastal freight water transport
	5021	50.30	50.30	Inland passenger water transport
	5022	50.40	50.40	Inland freight water transport
Air transport	5110	51.10	51.10	Passenger air transport
	5120	51.21	51.21	Freight air transport
	5120	51.22	-	Space transport
Support activities for transportation	5221	52.21	52.21	Service activities incidental to land transportation
	5222	52.22	52.22	Service activities incidental to water transportation
	5223	52.23	52.23	Service activities incidental to air transportation
	5224	52.24	52.24	Cargo handling
	5229	52.29	52.29	Other transportation support activities
Postal and courier activities	5310	53.10	53.10	Postal activities under universal service obligation
	5320	53.20	53.20	Other postal and courier activities
Travel agency, tour operator and other reservation service and related activities	7911	79.11	79.11	Travel agency activities
	7912	79.12	79.12	Tour operator activities
	7990	79.90	79.90 (s)	Other reservation service and related activities

(s) Sector code shared between several copyright-relevant industries; - Nonexistent SBI code.

## Information and Communication

<b>Economic activity</b>	<b>ISIC</b>	<b>NACE</b>	<b>SBI 4d</b>	<b>Description (NACE)</b>
Telecommunications	6110	61.10	61.10	Wired telecommunications activities
	6120	61.20	61.20	Wireless telecommunications activities
	6130	61.30	61.30	Satellite telecommunications activities
	6190	61.90	61.90	Other telecommunications activities

## Appendix B Methodology

### Appendix B.1 Data Sources

#### Employment

*Statistics Netherlands* (CBS) administrates the registration of data regarding the Dutch economy. Relevant for the determination of the amount of jobs in the copyright-relevant sectors are data on employee-employer relationships (*SSB Baansommen*), characteristics of every job (*SSB Baankenmerken*), characteristics of every employer (*SSB Bebuis*) and the registration of self-employed workers (*SSB Zelfstandigen*). Together, these data sources are called the *Social Statistic File* or *Sociaal Statistisch Bestand* in Dutch, hereafter abbreviated to SSB.

The most important part of the SSB for determining the amount of jobs, is the registration of all employee-employer relationships (*SSB Baankenmerken*). This registration is based on the official social security registration, in which every formal employee-employer relationship is registered. Workers who are outsourced are registered as working for their temporary employment (or: ‘temp’) agency. The sector in which they are actually working is not known. Therefore, only employees who are formally working for an organisation in a relevant sector are included in the figures in this study.

*SSB Baankenmerken* can be merged with *SSB Baansommen* to add the part-time factor to jobs. By doing this, a translation is made from the number of jobs in a certain time period to the number of full-time equivalents (FTEs). The use of the FTE measure is advised in the WIPO Guide of 2003. Furthermore, the WIPO Guide advises to measure the number of FTEs on a yearly basis by averaging the 12 monthly numbers of FTEs. In this study the monthly number of jobs and FTEs is calculated by counting the number of jobs and FTEs on the 15<sup>th</sup> day of each month. This way, when calculating the employment in copyright-relevant industries, double counting due to job switchers is reduced to a minimum.

An important trend in recent years is the increase of self-employment in the Netherlands. Data on the self-employed pose a challenge. In the creative industries the level of self-employed has traditionally been high, and has been rising even further in recent years. An example is the print industry, where several magazines have moved from a full editorial staff producing all content to a model where most content is produced by self-employed journalists.

By definition, self-employed workers are not part of the standard registration of employee-employer relationships. However, they *are* registered in the SSB based on their tax return. This means that only their yearly profit and their main sector of registration is known.<sup>36</sup>

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<sup>36</sup> This also entails that the part-time factor of self-employed (i.e., the number of weekly working hours as a fraction of a full-time contract) is unknown and that therefore the number of self-employed FTEs can only be *approximated* using the same part-time factor as the employed. For self-employed workers only the number of jobs is known. This estimation of self-employed FTEs incorporates the assumption that employees and self-employed, on average, work the same (or at least comparable) amount of hours per week.

Typical for self-employed workers is that they often work in different sectors during a year, as many of them work on short-term projects. This allocation of working hours over various sectors (whether copyright-relevant or not) is unknown, nor is the output/production of a self-employed person per sector available. This creates two types of measurement errors:

- Self-employed who are registered as working in a copyright-relevant sector actually work less than full-time (or even not at all) in that sector;
- Self-employed who are *not* registered to a copyright-relevant sector (as their primary source of income) in reality do work (part of their time) in a copyright-relevant sector.

Both measurement errors cannot be avoided, although they do – at least to a certain degree – cancel each other out.<sup>37</sup>

## Value Added

The value added of copyright-relevant sectors is calculated using Production Statistics (PS) of *Statistics Netherlands*. These PS are based on surveys among companies with at least 10 employees. These survey results are enriched by *Statistics Netherlands* with company tax data. By using weights, the survey results can be corrected to represent the full population of companies in a sector. The Production Statistics are an important source for *Statistics Netherlands* in drawing up the national accounts.

The value added for SBI codes 9#.# – which are not present in the PS data – is estimated using the weighted labour productivity in the other copyright-relevant industries (i.e., SBI codes lower than 90.#). Labour productivity is the value added per labour unit, in this case full-time equivalents (FTEs).<sup>38</sup> Both the numerator and denominator of the labour productivity fraction are weighted by the respective copyright factors, in order for it to express labour productivity associated with copyright. The formula is as follows:

$$Value\ Added_{9\#\# \text{ SBI codes}} = \frac{GVA_w}{FTEW_{Employed} + FTEW_{Self-employed}^*}$$

Weighted labour productivity was calculated for each of the relevant subcategories of copyright-relevant industries, i.e., seven labour productivity figures in total: five for the Core Copyright Industries *Press and Literature, Music, Theatrical Productions and Operas, Motion Picture and Video, Visual and Graphic Arts* and *Copyright Collecting Societies*, and two for the Partial Copyright Industries *Other crafts* and *Museums*.<sup>39</sup> To obtain the value added for the 9#.# SBI codes, the number of FTEs in each of these sectors was multiplied by the applicable labour productivity (see Table 22).<sup>40</sup>

<sup>37</sup> The risk of measurement errors is likely to increase with the number of years a self-employed person is active, as the chance that the actual relevant sector differs from the main sector of registration as a company (in the Dutch Trade Register) increases with time.

<sup>38</sup> As mentioned previously, FTE data is not available for self-employed people. Therefore for self-employed an estimation of the number of FTEs was made (denoted by the \* in the formula) using the part-time factors of employed people (data per SBI code).

<sup>39</sup> *Copyright Collecting Societies* and *Museums* cover only 9#.# SBI codes. Therefore the average labour productivity for *all* Core and Partial Copyright Industries, respectively, was used.

<sup>40</sup> An implicit assumption in this estimation is that the labour productivity in 9#.# SBI codes is equal (or at least comparable) to the labour productivity in the other sector codes in each subcategory.



**Table 22** Weighted average labour productivity per economic activity (value added at market prices per FTE)

Categorie	Economic activity	GVA <sub>mp</sub> / FTE
Core Copyright Industries	Press and Literature	69,421
	Music, Theatrical Productions and Operas	55,894
	Motion Picture and Video	52,737
	Visual and Graphic Arts	60,972
	Copyright Collecting Societies <sup>39</sup>	67,921
Partial Copyright Industries	Other crafts	45,723
	Museums <sup>39</sup>	52,704

Source: Analysis performed by SEO Economic Research using microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; Adaptation by SEO Economic Research.

For all calculations made using their microdata, CBS requires and verifies that these do not pose the risk of exposing individual persons and businesses. The implications of these requirements are explained in Box 3.

### Box 3 Data restrictions due to risk of disclosure

*Statistics Netherlands* (CBS) restricts use of their data on grounds of undesirable disclosure of sensitive information and confidentiality. Data on value added, employment and international trade for individual sectors (i.e., data per sector code) are released for publication only if the figure concerns at least 10 companies/persons (e.g., the value added in sector X is generated by at least 10 companies) *and* if the contribution of the largest company in the sector to the figure does not exceed 50% (e.g., the largest company in sector X is responsible for less than 50% of the value added of the sector).

If a certain sector does not meet one or both of the confidentiality criteria, its results (value added, employment and/or international trade) have to merged with other sectors to rule out the risk of disclosure. Consolidating sector codes is done only if the merged sector codes do not include 'shared' or 'partial' sectors (see Appendix B.3) and if they have the same copyright factor (see Appendix B.2).<sup>41</sup>

## Balance of Trade

CBS data on international trade in goods (in Dutch: *Internationale Handel in Goederen*, or IHG) cover all Dutch companies with a minimum annual revenue of € 900,000,-.<sup>42</sup> As implied by the name of the database, these data cover only *products* that cross the Dutch border – imports and exports of services and non-tangible goods (e.g., digital formats) are not included in these statistics.

*Statistics Netherlands* provides both product-level and company-level trade data. The product-level data are also input for the *International Trade* database of *Eurostat*.<sup>43</sup> The company-level trade data – i.e., the trade of goods by individual companies in the General Business Register – allow

<sup>41</sup> An exception was made for trade data, which in 16 cases included merging 'partial' and 'non-partial' sectors due to too many violations of the confidentiality criteria.

<sup>42</sup> CBS increments these data to include the trade value of companies below the revenue threshold of € 900,000,-.

<sup>43</sup> See: [http://epp.eurostat.ec.europa.eu/portal/page/portal/international\\_trade/data/database](http://epp.eurostat.ec.europa.eu/portal/page/portal/international_trade/data/database).

segmentation of trade per sector code. As a result, the complex process of attributing product codes to sector codes using several correspondence tables – as was necessary in the previous study (Leenheer *et al.*, 2008, pp. 26-27) – can be avoided. Company-specific trade data match the SBI sector classification<sup>44</sup> and prevent the potential distortions of ‘artificially’ assigning goods to sectors.<sup>45</sup> To illustrate this point: attributing product-level data to industry codes would result in trade data for 36 copyright-relevant ISIC codes, while company-level data cover practically all 200 copyright-relevant SBI codes (see Appendix A).

A distinction is made between regular imports and exports and those corrected for *re-exports*: “[g]oods transported via the Netherlands, which are temporarily owned by a resident of the Netherlands, without any significant industrial processing” (definition *Statistics Netherlands*).<sup>46</sup> Imports and exports including and excluding re-exports are presented, the latter giving a perspective on the flow of actual Dutch products in the copyright-relevant industries.

Note that domestic trade of the goods, which is not part of the data, interferes with the trade balance per sector: domestic trade can cause that the company that imports the good is in a different sector than the company that exports the good.

## Appendix B.2 Copyright Factors

According to the WIPO Guide, copyright factors are the necessary measure of the relevance of copyrights in economic activities. Copyrights are assumed to contribute 100% to economic activities in Core Copyright Industries. In Interdependent and Partial Copyright Industries, however, the relevance of copyrights is somewhat lower, and even lower in Non-Dedicated Support Industries (WIPO, 2003, p. 57). In determining the economic contribution of copyright-relevant industries, the value added, employment, and trade data in these sectors need to be weighted by these factors. Therefore, it is crucial to determine copyright factors properly.

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<sup>44</sup> Statistics Netherlands cannot assign some products to companies due to administrative imperfections: roughly 20% of the product VAT numbers cannot be paired with company identification numbers in the General Company Register (in Dutch: *Algemeen Bedrijvenregister*, or ABR, see also: <http://bit.ly/NubLfp>). This corresponds with roughly 20% of the total import value and 28% of the total export value.

The administrative problems with these goods suggest that many of them do not actually enter the Dutch economy but are re-exported or even forwarded in transit (in which case they are unjustly part of the import and export statistics since these should be cleared of transit trade, see footnote 46). This is corroborated by the data: nearly 90% of imports and 60% of exports of ‘unpaired’ goods (i.e., goods that cannot be assigned to Dutch companies) concern re-exports – goods that enter the Netherlands and are shortly owned by a Dutch entity but leave the country without significant industrial processing. This mitigates the absence of these goods in the trade data on copyright-relevant industries.

<sup>45</sup> Moreover, product-level trade data do not allow a distinction between different sectors involved in producing, distributing and selling the same good (i.e., different sectors in the same *production chain*). To put it differently, using data on a product level makes it impossible to identify which link in the production chain (e.g., the manufacturer or wholesaler) is responsible for the actual import or export of the good, as this is not registered in the trade data (Leenheer *et al.*, 2008, p. 27). This is not an issue when using company-level trade data. Therefore, company-level data are more accurate for current research purposes.

<sup>46</sup> *Transit trade*, “the flow of goods from one country to another through Dutch territory which is owned by a foreign entity” (definition Statistics Netherlands), is not included in the trade statistics.

### Previously Used Dutch Copyright Factors and International Developments

At the time of the previous research on the Netherlands (Leenheer *et al.*, 2008), only five countries (Canada, Hungary, Latvia, Singapore, and the United States) published studies about the economic contribution of copyright relevant industries that were based on the WIPO Guide. In these studies, for the first time, calculations were systematically weighted by factors that determine to what extent copyrights are relevant for an economic activity. The recommendation of the WIPO Guide is to use field research as much as possible to determine these factors for the Interdependent and Partial sectors (WIPO, 2003, p. 58-59). For the Netherlands, such research is not available. Therefore, factors based on surveys – in particular of Singapore and Hungary – were adapted in the Dutch study (see Table 23). For the Non-Dedicated Support Industries (NDSIs), the average of the Singaporean and Hungarian factors was used. These two factors are based on the WIPO formula (WIPO, 2003, p. 59) and, for Singapore, also on a survey.

**Table 23** Methods used to determine copyright factors in national reports

	Netherlands (Leenheer <i>et al.</i> , 2008)	Other countries
Core Copyright Industries	100%	100%
Interdependent Copyright-Relevant Industries	Singapore	Three methods: 1. 100% (e.g., US, Hungary, China) 2. Surveys (e.g., Singapore, Malaysia) 3. Use of copyright factors of other countries or an average of other countries
Partial Copyright-Relevant Industries	Average of Singapore and Hungary	Two methods: 1. Surveys (e.g. Hungary, Singapore), often combined with macroeconomic data (value added, employment, IP-proxies) 2. Use of copyright factors of other countries or an average of other countries
Non-Dedicated Support Industries	Average of Singapore and Hungary	Three methods: 1. WIPO Guide (most of the countries) 2. Survey (occasionally) 3. Average of other countries

Source: SEO Economic Research

Currently 35 national studies are available on the website of the WIPO.<sup>47</sup> Almost half of the countries conducted field research to determine copyright factors for Partial Industries and seven for Interdependent Industries. In addition, most of the studies followed the suggestion of WIPO and adapted a formula based on the value added of the NDSIs (WIPO, 2003, p. 59) to determine the NDSI factors. Based on these developments, reconsideration of the Dutch copyright factors used in the previous study is appropriate. Reconsidering previously used copyright factors is based on several criteria and a careful selection of country studies with own research. This procedure is described in the following sections.

<sup>47</sup> See: [http://www.wipo.int/copyright/en/performance/country\\_studies.html](http://www.wipo.int/copyright/en/performance/country_studies.html).

### Criteria for Determining New Copyright Factors for the Netherlands

There are some rules that need to be taken into consideration in determining the copyright factor. First of all, the WIPO Guide is binding:

*“The weighting process represents the establishment of the proportion of the copyright-based component of an industry. It has to be done in relation to all industries that are not core copyright-based industries where the contribution will be counted as 100%. More efforts should be applied in measuring the interdependent copyright industries, since their contribution is usually significantly bigger than that of the partial and non-dedicated support industries.” (WIPO, 2003, p.57)*

This criterion simply states that activities that are assigned to categories of lower dependence of copyright should get a lower copyright factor. Second, the results should be comparable with earlier studies for the Netherlands. Therefore, the starting point is the previous SEO study. Third, a plausible comparison with other countries is another goal of the WIPO. Hence, copyright factors used in other countries were taken into consideration when determining the Dutch factors.

### Core Copyright Industries

Following the WIPO Guide, the copyright factor equals 100% for Core Industries. This factor was used in the previous Dutch study. For the current study this rule is extended. However, the final ‘weight’ of Core Copyright Industries is lower than 100% if the WIPO:

- also registers the sector in another subcategory of the Core Industries (e.g., a sector is both part of *Motion Picture and Video* and *Radio and Television*) and/or WIPO registers the sector also as an Interdependent, Partial and/or Non-Dedicated Support Industry; and/or
- considers the sector only partially copyright-relevant.

In these cases, the Core Industry is ‘shared’ and/or ‘partial’, respectively, and thus not fully counted. In other words, although they are *conceptually* considered fully copyright-relevant (i.e., they have a copyright factor of 100%), *statistically* they are not. All sector codes are multiplied by a copyright factor (of a 100% for all Core Copyright Industries), a factor specifying the division of the sector over the applicable industry categories (a so-called *allocation key*) and a factor specifying the share of copyright-relevant activities within the sector code (a so-called *partiality coefficient*). For more detail on these last two fractions, see Appendix B.3.

### Interdependent and Partial Copyright Industries

For determining the copyright factor of *Interdependent Copyright Industries*, there are two distinct approaches. Some countries have set the copyright factor of Interdependent Copyright Industries at 100% – for instance, Bulgaria, China, Hungary, Jordan, Malawi, South Korea, Tanzania and the United States – and most of the countries that did not conduct own surveys used the copyright factors of other countries. Finally, some countries determine different copyright factors in different industries based on surveys and interviews. These countries include Bhutan, Brunei Darussalam, Malaysia, Pakistan, Romania, Singapore, Thailand, and Trinidad & Tobago. The copyright factors they use vary between 20% and 40%, depending on the country and the industry. In the previous Dutch study (Leenheer *et al.*, 2008, p. 30), the copyright factors of Singapore were used for Interdependent Industries.

The copyright factors for the *Partial Copyright Industries* are primarily obtained by surveys and interviews. This field research is often combined with macroeconomic data such as value added, employment, a competitiveness factor, and investments in education, scientific and R&D activity. Most of the countries with own research use also copyright factors of other countries as a base for their calculations. In this case, survey and macroeconomic data are used as weights to 'correct' for the factors of the selected countries. Approximately half of the countries followed this method.

Singapore, Hungary and the United States determined copyright factors for Partial Copyright Industries already in the early 2000s. Countries of more recent studies also developed their own factors, such as Bhutan, Brunei Darussalam and South Korea. Countries that did not conduct field research used the copyright factors of the above countries. Factors most commonly cited and used by countries are those of Singapore, Hungary and the United States. There is also a tendency to choose factors of a comparable country, even though most of the chosen countries do not have factors based on own research. In general, factors vary between 0,5% (Apparel, textiles, and footwear) and 50% (Toys and games / Museums). In the previous Dutch study (Leenheer *et al.*, 2008, pp. 29-30), the averages of the Singaporean and Hungarian factors were used for Partial Copyright Industries.

Currently, there is no own research available for the Netherlands. Therefore, the copyright factors for this study need to rely as much as possible on existing studies. As there is more research available than in 2008, for this analysis more country studies have been taken into consideration when determining a new average, thereby increasing the robustness of the copyright factors. The new copyright factors for the Netherlands were determined in 5 steps:

*Step 1:* Only those country studies are considered that have conducted their own research.

*Step 2:* In line with the 2008 report, the copyright factors of Singapore and Hungary have been taken into account.<sup>48</sup>

*Step 3:* A further selection was made based on the following conditions:

- 3a. Countries that provide information about their research method (including the number of observations in their survey) are considered.
- 3b. Countries that used a different classification of economic activities for determining copyright factors are not considered.

Besides Hungary and Singapore, step 3 leaves the following countries: Brunei Darussalam, Bulgaria, China, Malaysia, South-Korea, and Thailand.<sup>49</sup>

<sup>48</sup> The copyright factors of the US have not been used because they were and are not publicly available.

<sup>49</sup> *Brunei Darussalam:* Partial: the base is the average of 8 countries which is corrected by a survey; *Bulgaria:* Partial: the base is Hungary which is corrected by a survey; *China:* Partial: the base is an international comparison which is corrected by a survey and macroeconomic data; *Partial Interdependent* is based on macroeconomic data; *Hungary:* Partial: the base is the US which is corrected by a survey and the US methodology; *Malaysia:* Partial: the base is Singapore and Hungary which is corrected by a survey; *Interdependent* is based on a survey; *Singapore:* Partial: the base is the US which is corrected by a survey and macroeconomic data; *Interdependent* is based on a survey; *South Korea:* Partial is based on a survey; *Thailand:* Partial: the base in Malaysia which is corrected by a survey; *Interdependent* is based on a survey.

*Step 4:* For some copyright factors there is a high variance between countries. Therefore, the selection of copyright factors in above countries is further narrowed down based on the following criteria:

- 4a. For Interdependent industries, only those countries were included that determined copyright factors different from 100%, analogous to Leenheer *et al.* (2008, p. 30).
- 4b. For the remaining copyright factors, a range of factor values is determined that excludes outliers. This range is based on the mean and the standard deviation of copyright factors for each economic activity. To be precise, the range equals values within one standard deviation of the mean (above or below). Subsequently, a (conditional) mean of this subset of copyright factors was calculated.

*Step 5:* Table 24 presents the copyright factors of the selected countries. Those factors that satisfy the above criteria are marked with black. The new copyright factors for the Netherlands are the average of the selected copyright factors, including the earlier Dutch report (as it is the starting point for a trend analysis). All countries have the same weight in the average.

The first column in Table 24 shows the resulting copyright factors for the Partial and Interdependent Copyright Industries.

Table 24 Copyright factors in Interdependent and Partial Copyright-Relevant Industries in selected countries with own research and in the previous Dutch study

Economic activity	Netherlands (2014)	Netherlands (2008)	Brunei Darussalam	Bulgaria	China	Hungary	Malaysia	Singapore	South-Korea	Thailand
<b>Interdependent Copyright Industries</b>										
TV sets, Radio, VCRs, CD Players, etc.	32.5%	30.0%	100.0%	100.0%	100.0%	100.0%	40.0%	35.0%	100.0%	20.0%
Computers and equipment	32.5%	30.0%	100.0%	100.0%	100.0%	100.0%	40.0%	35.0%	100.0%	22.5%
Musical instruments	31.7%	35.0%	n.a.	100.0%	100.0%	100.0%	30.0%	20.0%	100.0%	30.0%
Photographic and cinematographic instruments	31.7%	30.0%	n.a.	100.0%	35.0%	100.0%	25.0%	30.0%	100.0%	40.0%
Photocopiers	30.0%	n.a.	n.a.	n.a.	30.0%	n.a.	n.a.	30.0%	n.a.	20.0%
Blank recording material	25.0%	25.0%	n.a.	100.0%	25.0%	100.0%	20.0%	25.0%	100.0%	20.0%
Paper	25.0%	25.0%	100.0%	100.0%	25.0%	100.0%	15.0%	25.0%	100.0%	15.0%
<b>Partial Copyright Industries</b>										
Apparel, textiles, and footwear	5.8%	2.7%	22.3%	0.6%	0.4%	0.5%	15.0%	0.4%	11.5%	15.0%
Jewellery and coins	26.0%	33.5%	42.0%	20.0%	8.0%	25.0%	n.a.	42.0%	21.4%	30.0%
Other crafts	39.3%	41.0%	42.0%	40.0%	40.0%	40.0%	26.7%	42.0%	21.4%	30.0%
Furniture	8.8%	6.7%	21.8%	5.0%	5.0%	5.0%	35.0%	8.3%	9.9%	30.0%
Household goods, china and glass	0.9%	0.6%	3.7%	0.5%	0.3%	0.5%	0.4%	0.6%	8.9%	0.4%
Wall covering and carpets	2.0%	1.9%	2.5%	4.0%	2.0%	2.0%	1.1%	1.7%	21.5%	1.1%
Toys and games	44.0%	46.0%	50.0%	40.0%	40.0%	50.0%	26.7%	42.0%	15.0%	40.0%
Architecture, engineering, surveying	8.1%	9.0%	29.0%	10.0%	6.0%	10.0%	5.3%	8.3%	32.5%	30.0%
Interior design	12.1%	n.a.	n.a.	n.a.	5.0%	n.a.	5.3%	8.3%	72.3%	30.0%
Museums	36.8%	50.0%	50.0%	50.0%	0.5%	50.0%	n.a.	n.a.	10.8%	10.0%

Source: SEO Economic Research based on the selected country studies; n.a. = not available; Grey numbers are not considered in the 2014-average due to criteria 4a and 4b.

### Non-Dedicated Support Industries

The copyright factor of Non-Dedicated Support Industries (NDSI) is most commonly determined on the basis of the WIPO Guide. According to the WIPO Guide:

*“This weighting is built on the assumption that the proportionate contribution of the copyright-based industries to the total distribution industry value added (transportation and trade sectors) is the same as the percentage contribution of the copyright industries to the total non-distribution industries.” (WIPO 2003, p.59.)*

The WIPO formula, using the Gross Value Added (GVA at market prices) as a basis to calculate the NDSI factor, is the following:

$$\text{Copyright factor NDSIs} = \frac{GVA_{w\text{Core Industries}} + GVA_{w\text{Interdependent Industries}} + GVA_{w\text{Partial Industries}}}{GDP - GVA_{\text{NDSIs}}}$$

The weights used in the nominator are the copyright factors. In this study the WIPO formula results in a copyright factor of 6% for the Non-Dedicated Support Industries.<sup>50</sup>

**Table 25** Data used to calculate copyright factor for NDSIs

	<b>2011</b> (in million Euros)
Weighted* gross value added (at market prices) of:	
Core Copyright Industries	27,639
Interdependent Copyright Industries	2,446
Partial Copyright Industries	+ 1,878
<b>Total</b>	<b>31,963</b>
Gross Domestic Product <sup>^</sup>	599,047
Weighted** gross value added (at market prices) of NDSIs	- 64,836
<b>Non-tradable GDP</b>	<b>534,211</b>
<b>Copyright factor NDSIs</b>	<b>6.0%</b>

Source: Analysis performed by SEO Economic Research using microdata concerning Production Statistics (PS) 2011 made available by *Statistics Netherlands*; \* = Weighted by copyright factor, allocation key and partiality coefficient; \*\* Weighted only by allocation key and partiality coefficient; ^ = CBS *Statline* (further provisional data).

<sup>50</sup> Since the formula for the copyright factor of the Non-Dedicated Support Industries includes the weighted gross value added of Core, Interdependent and Partial Copyright Industries, this factor changes when ‘partial’ copyright-relevant sectors are excluded as a matter of robustness check (see Appendix B.3). In the robustness checks the copyright factor decreases from 6.0% to 5.4%.



### Copyright Factors for the Netherlands

The following table summarizes the copyright factors used for the Netherlands in this study.

**Table 26** Copyright factors in the Netherlands

<b>Economic activity</b>	<b>Copyright factor 2014</b>	<b>Copyright factor 2008</b>
<b>Core Copyright Industries</b>		
Press and Literature	100.0%	100.0%
Music, Theatrical Productions, Operas	100.0%	100.0%
Motion Picture and Video	100.0%	100.0%
Radio and Television	100.0%	100.0%
Photography	100.0%	100.0%
Software and Databases	100.0%	100.0%
Visual and Graphic Arts	100.0%	100.0%
Advertising	100.0%	100.0%
Copyright Collecting Societies	100.0%	100.0%
<b>Interdependent Copyright Industries</b>		
TV sets, Radio, VCRs, CD Players, DVD Players, etc.	32.5%	30.0%
Computers and Equipment	32.5%	30.0%
Musical Instruments	31.7%	35.0%
Photographic and Cinematographic Instruments	31.7%	30.0%
Photocopiers	30.0%	n.a.
Blank Recording Material	25.0%	25.0%
Paper	25.0%	25.0%
<b>Partial Copyright Industries</b>		
Apparel, textiles and footwear	5.8%	2.7%
Jewellery and coins	26.0%	33.5%
Other crafts	39.3%	41.0%
Furniture	8.8%	6.7%
Household goods, china and glass	0.9%	0.6%
Wall coverings and carpets	2.0%	1.9%
Toys and games	44.0%	46.0%
Architecture, engineering, surveying	8.1%	9.0%
Interior design	12.1%	n.a.
Museums	36.8%	50.0%
<b>Non-dedicated support industries</b>		
General wholesale and retailing	6.0%	6.0%
General Transportation	6.0%	6.0%
Information and communications	6.0%	6.0%

Source: SEO Economic Research; n.a. = not available.

### Ex Post Check

As the factors in Table 26 show, the earlier mentioned first criterion based on the WIPO Guide (WIPO 2003, p. 59) satisfies for the Dutch copyright factors. Note also that adding new research to the average lowers the copyright factors for Partial and Interdependent Copyright Industries compared with 2008.

Finally, another test can be applied *ex post*. Reflecting on the WIPO Guide, Watt (2004) published a study about classification and copyright factors. In this article, he suggests a criterion to assess *ex post* – that is, after the calculation based on the chosen classification and copyright factors – how the contribution of copyright-relevant industries relate to an objective critical value. The critical value is based on non-weighted value added data and is therefore independent of copyright factors and classification. The calculated weighted contribution can then be compared to this critical value. Based on this comparison, it is possible to conclude on the following: i) in which direction the contribution of copyright-relevant industries deviates from the independent critical value (in other words, whether classification and copyright factors are conservative or liberal) and ii) how big this deviation is.

Watt argues that the more the contribution based on weighted value added exceeds the objective critical value, the more liberal the choice is for classification and copyright factors. The closer these values are to each other, the more conservative is the choice for weights. Watt suggests that a more conservative choice is likely to lead to a statistically more reliable estimate for the economic contribution.

Watt's *ex post* test can in the following way be applied to the Netherlands in 2005 and 2011. From the core of the study, it is known that the contribution of copyright-relevant industries was 5.9 percent in 2005 and 6.0 percent in 2011. The critical value according to Watt's formula is 4.9 percent in 2005 and 5.4 percent in 2011.<sup>51</sup> It means that the difference between the critical value and the weighted contribution is 1 percentage point in 2005, that is the weighted contribution exceeds the critical value with 20.4 percent. In 2011, the deviation is somewhat lower, 0.6 percentage point, and the weighted value lies 11.1 percent above the critical value. It implies that the classification and copyright factors chosen for 2011 are more conservative than those in 2005.

## Appendix B.3 'Shared' and 'Partial' Sector Codes

### 'Shared' Sector Codes

The primary solution to disentangle 'shared' (i.e., multiple-listed) sector codes is to use more detailed 5-digits SBI codes. For instance, the wholesale of press and literature is part of NACE/SBI code 46.49 Wholesale of other household goods, a code shared between *Press and Literature* and *Music, Theatrical Productions and Operas* (the latter for wholesale of musical instruments), but also listed under Interdependent and Partial Copyright Industries. By narrowing this down to the wholesale of paper and paperboard goods (SBI 46.49.7) and of books, magazines and other printer matter (SBI 46.49.8) this economic activity is no longer shared between copyright industries. Hence, an assessment was made to what extent the underlying 5-digits codes (when available) correspond with the economic activity in question. The outcomes of this are presented in the last two columns of the tables in Appendix A.1 to Appendix A.3.

Apart from the fact that 5-digits codes are not always available in either the SBI sector classification (see Appendix A) or in the data itself (i.e., the data is too aggregated), 5-digits codes

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<sup>51</sup> The calculation is available from the authors upon request.

can be ‘shared’ themselves.<sup>52</sup> When this occurs – the 4-digits code is ‘shared’ and data on 5-digits level is either not available or ‘shared’ itself – value added, employment and balance of trade needs to be attributed *pro rata* to economic activities that share the same SBI code. This is done by calculating a so-called *allocation key* based on the ratio between the size of economic activity X and economic activity Y (Leenheer *et al.*, 2008, pp. 27-28). If, for example, the value added of economic activity X equals € 450 M and that of economic activity Y € 550 M (both including<sup>53</sup> the sector code(s) they share), 45% of the sector code(s) shared between activities X and Y will be attributed to activity X and 55% to activity Y.

The ratio between economic activities was calculated twice: one ratio using value added data and one using employment data (jobs of employees and self-employed). Comparability between both ratios is very high, usually within a range of 5 percentage points. The final allocation key is an average of both ratios, rounded to a multiple of 5 percent. Resulting allocation keys were checked on plausibility and adjustments were made accordingly.<sup>54</sup>

See Table 27 for the allocation keys used for ‘shared’ 5-digits codes and Table 28 for the allocation keys used for ‘shared’ 4-digits codes.

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<sup>52</sup> Of the 28 5-digits codes that are listed in Appendix A, 11 are ‘shared’.

<sup>53</sup> Excluding ‘shared’ sector code(s) when calculating the allocation key can lead to much more extreme and unrealistic apportioning, particularly if the remaining sectors in economic activities that share one or more sector codes (i.e., the non-shared sector codes in each of the economic activities) are relatively small in terms of economic contribution. To illustrate this mathematically, consider the previously mentioned economic activities X and Y, totalling a value added of € 450 M and € 550 M respectively. If they share a sector that totals € 400 M in value added, excluding this sector from the equation would result in a much more ‘skewed’ allocation of 25% to activity X (€ 50 M / € 200 M) and 75% to activity Y (€ 150 M / € 200 M). The smaller the non-shared sectors are, the more ‘sensitive’ the allocation key becomes to inequality between them. Similarly, an allocation key that excludes shared sectors in the numerator and denominator automatically ‘disfavours’ economic activities that have many shared sector codes. Consider for instance the Core Copyright Industry *Music, Theatrical Productions and Operas*, of which only SBI code 59.20 is not shared. Consequently, an allocation key for the shared 5-digits code 77.29.9, which includes the renting of theatre costumes, stage sets and props but also the renting of books and therefore is shared with *Press and Literature*, would bring only 1 sector code of *Music, Theatrical Productions and Operas* into the equation (SBI 59.20) and no less than 17 non-shared sector codes of *Press and Literature*.

<sup>54</sup> For instance, if rounding to a multiple of 5 percent resulted in a weight of 0% (i.e., an actual weight of less than 2.5%) this was adjusted to 5%.

Table 27 Allocation keys for 'shared' 5-digits SBI codes

SBI	Category	Subcategory	Economic activity	Allocation
46.43.5 Wholesale of video and music recordings	Core	Music, Theatre, etc.	Wholesale, retail and rentals of recorded music (sale and rental)	75%
	Core	Motion Picture and Video	Video rentals and sales, video on demand	25%
46.49.4 Wholesale of toys	Interdep.	-	TV sets, Radios, VCRs, CD Players, DVD Players, Cassette Players, Electronic Game Equipment, and other similar equipment	40%
	Partial	-	Toys and games	60%
46.49.5 Wholesale of musical instruments	Core	Music, Theatre, etc.	Wholesale, retail and rentals of recorded music (sale and rental)	75%
	Interdep.	-	Musical Instruments	25%
47.59.3 Shops selling various home furnishings	Partial	-	Other crafts	40%
	Partial	-	Household goods, china and glass	60%
47.59.5 Shops selling glassware, china and pottery	Partial	-	Other crafts	40%
	Partial	-	Household goods, china and glass	60%
47.59.6 Specialised shops selling other household goods n.e.c.	Partial	-	Other crafts	40%
	Partial	-	Household goods, china and glass	60%
47.59.7 Non specialised shops selling household articles	Partial	-	Other crafts	40%
	Partial	-	Household goods, china and glass	60%
59.11.2 Television programme production	Core	Radio and Television	Television programme production activities	70%
	Core	Radio and Television	Independent producers	30%
77.29.2 Renting of clothing and household goods	Core	Music, Theatre, etc.	Wholesale, retail and rentals of recorded music (sale and rental)	10%
	Interdep.	-	TV sets, Radios, VCRs, CD Players, DVD Players, Cassette Players, Electronic Game Equipment, and other similar equipment	25%
	Interdep.	-	Musical Instruments	5%
	Partial	-	Furniture	60%
77.29.9 Renting of other consumer goods n.e.c.	Core	Press and Literature	Wholesale and retail of press and literature (book stores, newsstands, etc.)	60%
	Core	Music, Theatre, etc.	Wholesale, retail and rentals of recorded music (sale and rental)	40%
77.39.9 Renting and leasing of other machinery and equipment and of other goods (no vending and slot machines)	Interdep.	-	TV sets, Radios, VCRs, CD Players, DVD Players, Cassette Players, Electronic Game Equipment, and other similar equipment	60%
	Interdep.	-	Photographic and Cinematographic Instruments	40%

Source: SEO Economic Research based on microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*.

Table 28 Allocation keys for 'shared' 4-digits SBI codes

SBI	Category	Subcategory	Economic activity	Allocation
18.12 Other printing	Core	Press and Literature	Pre-press, printing, and post-press of books, magazines, newspapers, advertising materials	60%
	Core	Visual and Graphic Arts	Graphic design and service activities related to printing*	40%
18.20 Reproduction of recorded media	Core	Music, Theatre, etc.	Production/manufacturing of recorded music	50%
	Core	Motion Picture and Video	Allied services	50%
46.43 Wholesale of electrical household appliances, audio and video equipment, photographic and optical articles	Core	Music, Theatre, etc.	Wholesale, retail and rentals of recorded music (sale and rental)	20%
	Core	Motion Picture and Video	Video rentals and sales, video on demand	5%
	Interdep.	-	TV sets, Radios, VCRs, CD Players, DVD Players, Cassette Players, Electronic Game Equipment, and other similar equipment	45%
	Interdep.	-	Photographic and Cinematographic Instruments	30%
46.49 Wholesale of other consumer goods (non-food)	Core	Press and Literature	Wholesale and retail of press and literature (book stores, newsstands, etc.)	15%
	Core	Music, Theatre, etc.	Wholesale, retail and rentals of recorded music (sale and rental)	10%
	Interdep.	-	TV sets, Radios, VCRs, CD Players, DVD Players, Cassette Players, Electronic Game Equipment, and other similar equipment	30%
	Interdep.	-	Musical Instruments	5%
	Partial	-	Toys and games	40%
46.51 Wholesale of computers, peripheral equipment and software	Core	Software and Databases	Wholesale and retail prepackaged software (business programs, video games, educational programs etc.)	50%
	Interdep.	-	Computers and Equipment	50%
47.19 Department stores and similar non-specialised stores with non-food	Partial	-	Jewellery and coins	20%
	Partial	-	Other crafts	25%
	Partial	-	Furniture	35%
	Partial	-	Toys and games	20%
47.41 Shops selling computers, peripheral equipment and software	Core	Software and Databases	Wholesale and retail prepackaged software (business programs, video games, educational programs etc.)	50%
	Interdep.	-	Computers and Equipment	50%
47.59 Shops selling furniture, articles for lighting and other household articles n.e.c.	Interdep.	-	Musical Instruments	5%
	Partial	-	Other crafts	25%
	Partial	-	Furniture	30%
	Partial	-	Household goods, china and glass	40%
47.63 Shops selling music and video recordings	Core	Music, Theatre, etc.	Wholesale, retail and rentals of recorded music (sale and rental)	75%
	Core	Motion Picture and Video	Video rentals and sales, video on demand	25%
59.11 Motion picture and television programme production	Core	Motion Picture and Video	Motion picture and video production and distribution	60%
	Core	Radio and Television	Television programme production activities and independent producers*	40%
59.12 Support activities to motion picture and television programme production	Core	Motion Picture and Video	Motion picture and video production and distribution	60%
	Core	Radio and Television	Television programme production activities	40%
59.13 Distribution of motion pictures and television programmes	Core	Motion Picture and Video	Motion picture and video production and distribution	60%
	Core	Radio and Television	Television programme production activities	40%

SBI	Category	Subcategory	Economic activity	Allocation
74.10 Industrial and fashion design	Core	Visual and Graphic Arts	Graphic design	5%
	Partial	-	Apparel, textiles and footwear	25%
	Partial	-	Jewellery and coins	10%
	Partial	-	Other crafts	5%
	Partial	-	Furniture	15%
	Partial	-	Household goods, china and glass	20%
	Partial	-	Wall coverings and carpets	5%
	Partial	-	Toys and games	10%
74.20 Photography and photo and film developing	Core	Photography	Studios and commercial photography	90%
	Core	Visual and Graphic Arts	Picture framing and other allied services	10%
77.22 Renting of video tapes and disks	Core	Music, Theatre, etc.	Wholesale, retail and rentals of recorded music (sale and rental)	50%
	Core	Motion Picture and Video	Video rentals and sales, video on demand	50%
77.29 Renting of other consumer goods	Core	Press and Literature	Wholesale and retail of press and literature (book stores, newsstands, etc.)	15%
	Core	Music, Theatre, etc.	Wholesale, retail and rentals of recorded music (sale and rental)	10%
	Interdep.	-	TV sets, Radios, VCRs, CD Players, DVD Players, Cassette Players, Electronic Game Equipment, and other similar equipment	20%
	Interdep.	-	Musical Instruments	5%
	Partial	-	Furniture	50%
77.39 Renting and leasing of other machinery and equipment and of other goods	Interdep.	-	TV sets, Radios, VCRs, CD Players, DVD Players, Cassette Players, Electronic Game Equipment, and other similar equipment	60%
	Interdep.	-	Photographic and Cinematographic Instruments	40%
79.90 Tourist information and reservation services	Core	Music, Theatre, etc.	Performances and allied agencies (bookings, ticket agencies, etc.)	50%
	Non-ded.	Travel agency, tour operator, etc.	Travel agency, tour operator and other reservation service and related activities	50%
90.01 Performing arts	Core	Music, Theatre, etc.	Performances and allied agencies (bookings, ticket agencies, etc.)	50%
	Core	Visual and Graphic Arts	Artists	50%
90.02 Support activities to performing arts	Core	Music, Theatre, etc.	Performances and allied agencies and support activities to performing arts and operation of concert and theatre halls*	50%
	Core	Visual and Graphic Arts	Art galleries and other wholesale and retail	50%
90.03 Writing and other artistic creation	Core	Press and Literature	Authors, writers, translators	25%
	Core	Music, Theatre, etc.	Artistic creation (writers, performers, directors, etc.)*	25%
	Core	Motion Picture and Video	Writers, directors, actors	25%
	Core	Visual and Graphic Arts	Graphic design and visual artists*	25%
90.04 Theatres and event halls	Core	Music, Theatre, etc.	Operation of concert and theatre halls (incl. support activities)*	50%
	Core	Visual and Graphic Arts	Art galleries and other wholesale and retail	50%

Source: SEO Economic Research based on microdata concerning PS 2011 and SSB 2011 made available by *Statistics Netherlands*; \* = Combination of economic activities to prevent double counting of sector codes.

## 'Partial' Sector Codes

The partiality (p) indicators in Annexes II and III of the new WIPO Guide denote sector codes that are not fully copyright-based. In other words, these sector codes are over-inclusive and also encompass activities that are not considered copyright-relevant by the WIPO. Similar to solving the 'shared' sector codes problem, the primary solution to overcome partiality is to use underlying 5-digits SBI codes that are *fully* copyright-relevant and therefore eradicate the (p) indicator of the overlying 4-digits code. However, as mentioned previously, many 4-digits codes do not have underlying 5-digits codes. Moreover, 5-digits codes can be 'partial' themselves and therefore have to be examined in detail for the possible inclusion of non-copyright-relevant activities, using the detailed SBI documentation.

When 'partial' sector codes persist, a so-called *partiality coefficient* needs to be determined. This coefficient, ranging from 0 to 1 (or: 0% to 100%), denotes the share of copyright-relevant activities within the sector code. This coefficient should not be confused with the copyright factor (Appendix B.2), which is intended to reflect the contribution of copyright in the value chain of a given economic activity (good or service).

Since statistical databases – by definition – do not offer empirical grounds to base the partiality coefficient on (the sector classification used in databases is not detailed enough), any value for the coefficient between 0 and 1 would be speculative.<sup>55</sup> Put differently, the partiality coefficient cannot be estimated. 'Partial' sectors are by default fully included in the study outcomes (i.e., a partiality coefficient of 1), providing an upper bound estimation of their contribution.<sup>56</sup> Subsequently, in the robustness checks in Chapter 2, the 'partial' sectors are left out completely (i.e., a partiality coefficient of 0). Table 2, Table 5 and Table 8 illustrate what the economic contribution of the copyright-relevant industries would be if the partiality coefficient assumes the lowest possible value – being 0, in other words not counting the 'partial' sectors at all – and thus provide a lower bound estimation.

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<sup>55</sup> It is possible that there are alternative sources that could shed light on the ratio between copyright-relevant and non-copyright-relevant economic activities within a 'partial' sector code. However, such an exercise is beyond the scope of this study.

<sup>56</sup> Note that, since the (p) indicators were absent in the previous WIPO Guide, fully including 'partial' sector codes (a partiality coefficient of 1) has been the default in all country studies up until now. In other words, for trend analysis (comparisons with previous studies) a partiality coefficient of 1 is desirable.



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