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**Innovation and Competitiveness
of the Creative Industries**

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Austrian Institute of Economic Research

The original report was contracted and financed by the European Commission, DG Enterprise and Industry. It was prepared between January and May 2010 and formed the Background Report to chapter 5 of the European Competitiveness Report 2010. This version updates some of the original evidence.

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Abstract

Broadly speaking, the creative industries comprise activities "at the crossroads between arts, business and technology" and produce "symbolic products with a heavy reliance on intellectual property" (UNCTAD, 2004, p.4). This report provides a comprehensive picture of the innovation performance and competitiveness of the creative industries, along with their relative size and economic performance in the EU 27 countries. It is structured along the three main ways (primary, secondary and tertiary) in which the creative industries affect the economy. The primary economic impact of the creative industries refers to their direct contribution to the economy – in terms of employment, turnover and exports. The secondary economic impact involves spill-overs to the wider economy as a result of economic activity of the creative industries. In this context the study analyses creative supply chain linkages and the creative industries' contribution to stimulating regional growth. The tertiary economic impact, meanwhile, assesses the direct, but less quantifiable effects of the creative industries on the wider economy through their role in the innovation system. The last chapter of the report reflects on the policy rationales and initiatives throughout the EU member countries and the Union in support of the creative economy.

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2011/077/S/WIFO project no: 10209

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Free download: <http://www.wifo.ac.at/www/pubid/41510>

Brief Summary

This report provides a comprehensive picture of the innovation performance and competitiveness of the creative industries, along with their relative size and economic performance in the EU-27 countries. It is structured along the three main ways (primary, secondary and tertiary) in which the creative industries affect the economy and reflects on the policy rationales and initiatives throughout the Member States and the Union.

The EU-27's creative industries employ about 6.7 million people, which represented 3.0 per cent of total employment in 2008. The creative industries have been one of the fastest growing parts of the EU economy, averaging employment growth of 3.5 per cent per year between 2000 and 2007, compared to 1 per cent for the total economy. Turnover developed dynamically until 2008, though there were considerable differences in the growth performance of the subsectors of the creative economy. The 2009 recession hit the creative industries badly. With +2.2 per cent p.a. the EU-27's external export of creative goods developed well between 2002-2008, but it did not tie up with the growth dynamics of total export goods. Moreover, this report provides ample evidence on the wider economic impact of the creative industries through creative supply chain linkages, regional and sectoral spillovers.

The subsectors of the CIs are quite heterogeneous with respect to their business models, organisational modes, cooperation structures, and economic performance, yet they share a number of common features. Designing CI policies inevitably involves an interdisciplinary approach and calls for a careful balancing of the introduction of sector-specific instruments on the one hand side and the absorption of CIs into already existing support measures on the other hand side. The empirical results of the study support a role for supranational policies mainly with respect to agenda setting and the establishment of proper framework conditions. Enforcing the implementation of the Service Directive and establishing a single market for online content and service is of utmost importance.

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1. Introduction

Broadly speaking, the creative industries (CI for short) comprise activities “at the crossroads between arts, business and technology” and produce “symbolic products with a heavy reliance on intellectual property” (UNCTAD, 2004, p. 4). In European countries, the term ‘creative industries’ was first introduced by the UK Department of Culture, Media and Sport (DCMS) in 1998, defined as “those industries that have their origin in individual creativity, skill, and talent and that have a potential for wealth and job creation through the generation and exploitation of intellectual property” (DCMS, 1998, 2001). The significant size of the creative industries and its high growth rates over the last two decades has aroused considerable interest from policy makers at the national, regional, and international level, particular those concerned with urban planning, regional development, labour market and education policies and, more recently, innovation policy (Caves, 2000; Hesmondhalgh, 2007; Landry, 2000; Stoneman, 2010 and Miles and Green, 2008).

While the concept of the creative industries has been commonly applied in the EU countries for more than a decade, in the US the focus has been more on creative knowledge workers or the ‘creative class’ as it is labelled by Florida (2002). Creative workers such as engineers, scientists, architects, artists and writers generate ideas and knowledge within and outside the creative industries, such as in skill-intensive manufacturing and other business services. Wherever they find employment, they are seen as the driving force behind innovativeness and regional growth. In the related literature, the growth effects of both creative industries and the creative workforce and its role in the wider economy are subjects of intensive debate.

The growth of the creative industries is driven by various trends (UNCTAD, 2008): reduced working time (more leisure), improved education, and growing real income have all triggered changes in preferences, resulting in increased demand for goods and services with creative, cultural, and artistic content. Areas like film, music, performing arts, and lifestyle products are the predictable beneficiaries of these trends, all of which have direct consequences on the overall contribution of the sector to national employment and GDP. In addition, new technologies – especially innovations in information and communication technologies (ICT) – have had a massive impact on many creative industry segments and contributed to the rapid growth of software and multimedia services. ICT and the internet are leading to new forms of distribution, more choices for consumers, and a more efficient production process. However, it has also initiated the profound ongoing restructuring of the traditional publishing and media industry. Furthermore, firms in the creative industries are increasingly being regarded not merely as users of new technologies, but as a source of innovative ideas and services (e.g. images, design, and symbols).

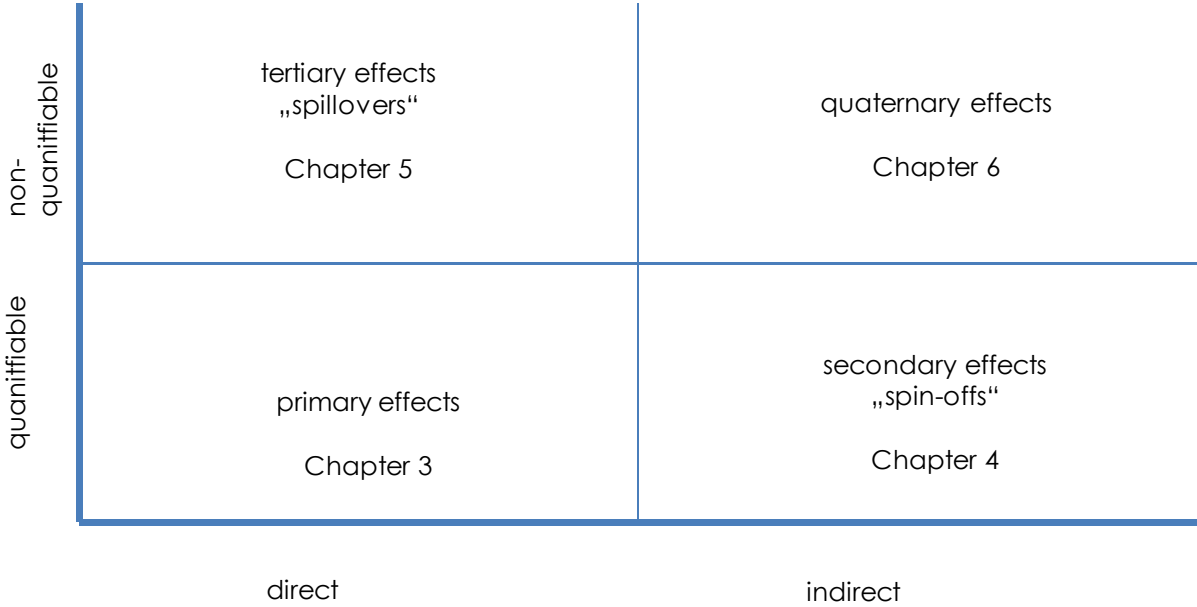
While there is a widespread perception that creative industries comprise a highly diverse set of economic activities, they are also often seen to have a number of common characteristics. Most of the firms are small (employing fewer than 10 people), and most of the workers are high skilled, many of them being self-employed, working part-time and/or having temporary contracts. Creative industries also often feature a high degree of networking, intensive supply-chain and other inter-firm linkages, and are concentrated in major cities, in many cases organised in regional clusters.

The main objective of this report is to provide a comprehensive picture of the innovation performance and competitiveness of the creative industries, along with their relative size and economic performance in the EU-27 countries. In doing so, it explores the growth drivers of the CIs as well as their economic impact on the wider economy.

Chapter 2 sets the scene in defining the subject matter. Some attention is given to delineating the CIs from related concepts such as cultural/content/copyright industries and cultural/experience/digital economies, respectively (Hartley, 2005; Potts et al., 2008 and Flew, 2002). However, the main focus is on the specificities of creative products which give rise to the unique business models of the creatives and an industry structure that is quite distinct from the economic textbook model of standard or 'humdrum' industries. Chapter 2 also comes up with a definition of the CIs in statistical terms. However contestable any classification of cross-sectoral activities such as the CIs might be, it is indispensable for presenting consistent international evidence on key economic performance indicators.

The main part of the study, chapters 3 – 5, is structured according to three main ways (primary, secondary and tertiary) in which the CIs affect the economy (Chartrand, 1984; Heng and Choo, 2003 and Potts and Cunningham, 2008).

Figure 1.1: Economic Impact of the Creative Industries: Structure of the report



Source: Chartrand – WIFO illustration

The primary economic impact of the CIs refers to their direct contribution to the economy – usually in terms of employment and some output measure, such as turnover, value added, or exports. Secondary economic impacts involve spillovers into the wider economy as a result of economic activity in the creative industries. For instance, those CI segments which produce intermediate inputs for other sectors rather than final products (such as graphics and design) are expected to profit from enterprises' growing efforts to establish dedicated brands and enhance brand recognition. Secondary impacts can be assessed by investigating how important the creative industries are in stimulating (i) regional growth through regional spillovers and (ii) demand in other sectors of the economy through sectoral spillovers. The tertiary economic impact, meanwhile, aims to capture the direct, but less quantifiable contributions of the CIs to innovation. It addresses the question of how innovative the CIs are and to what extent they foster the innovation performance of the wider economy. This report only briefly touches upon the quaternary economic impact of the CIs, examining aspects such as the CIs' role in improving the quality of life, maintaining and/or restoring a sense of

cultural identity, and realising a wide range of other societal objectives. These indirect and non-quantifiable contributions of the CIs are only referred to in the analysis of CI policies in chapter 6. The report reflects on the rationales for CI policy intervention, maps respective policy approaches across EU Member States and discusses the role for EU policy action.

This report aims to answer the following questions:

- What is the relative size of the sector and its evolution over time in terms of employment, turnover, and exports?
- How and to what extent is the current recession affecting the creative industries?
- What do the creative industries have in common? How do they differ?
- To what extent are creative industries and the creative workforce spatially clustered and what are the underlying factors?
- What characterises urban areas and regions with a high population share of creative individuals? Do these regions exhibit higher levels of growth?
- How innovative are firms in the selected creative industries in terms of technological innovations as compared to firms in other industries? Which sources of knowledge and innovation partners are most relevant for the innovation process?
- To what extent do creative industries contribute to innovations in the greater economy? What contribution do design innovations make to firms in non-creative industries?
- What is the role of government in supporting and promoting the creative industries?

2. Classification of the creative industries

Creative industries are defined as “those activities which have their origin in individual creativity, skill and talent and which have the potential for wealth and job creation through the generation and exploitation of intellectual property” (DCMS, 1998). The concept spans a multitude of highly heterogeneous segments all operating at the interface between creativity, culture, (technological) knowledge and the commercialisation thereof. These activities range across all points along the value-added chain, from the emergence, development and conception of an idea ('content origination') to its implementation ('production/reproduction') and marketing ('distribution/exchange') (Pratt, 2004).

Among urban planners and regional policymakers, creative industries are frequently alternatively referred to as cultural industries. From a conceptual point of view, the cultural concept puts more emphasis on the act of creativity and the public domain, and less so on market aspects, while for the creative industries the commercial side outweighs the cultural and creative-artistic aspects.

The cultural industries comprise, among others, fields that are generally known as 'high culture', including theatres, opera houses and concert halls, museums and libraries, all of which are usually recipients of considerable amounts of public funding. These segments are dominated by non-profit firms close to natural monopolies, or consist more-or-less of state firms only, as is the case in cultural heritage. It is a matter of dispute whether or not these activities are part of the creative industries.

In practice, the distinction between these two concepts – and between creative versus cultural economies, or the economy of culture or creativity, respectively – is often hard to tell and rather seems to be rooted in plain conventions, and/or the availability of data sources. On the other end of the spectrum to cultural industries we find competitively organized, profit-oriented enterprises of the creative-technological domain, including software production and related services, such as multimedia, which aroused some attention during the New Economy hype. Between these two extremes we come across the small but proliferating audiovisual segment (film and video, sound studios, etc.), graphic designers and advertising agencies, which play a weighty role in business and are mostly organised into monopolistic (and oligopolistic) competition markets. As consumers of creative-artistic inputs and suppliers of creative-technological intermediate products, these domains are closely interconnected with all parts and subfields of the creative economy (Ratzenböck et al., 2004).

Most CI work carries a substantial amount of symbolic content and intangible value that goes far beyond its material value, so that intellectual property, copyrights and the protection thereof are a weighty factor in the growth of this sector. On that account some scholars refer to the CIs as copyright industries. New technologies and especially ICT have had a massive impact on the functioning of many CIs and have contributed to the rapid growth of software and multimedia services. To the extent that technological advances have enabled mass (re)production – and mass consumption for that matter - of artistic or creative contents, concerns are increasing as to the proper balancing of copyright for the so-called content industries.

Box 2.1: Definitional approaches to the creative parts of the economy

Creative industries: "... have their origin in individual creativity, skill and talent and have a potential for wealth and job creation through the generation and exploitation of intellectual property" (UK Creative Industries Taskforce, 1998).

"... any economic activity producing symbolic products with a heavy reliance on intellectual property...at the crossroads between arts, business and technology" (UNCTAD, 2004, p. 4)

Cultural industries: "...their output embodies, at least potentially, some form of intellectual property (Throsby, 2001, p. 4).

Creative Economy: "The rise of the "Creative Economy" is drawing the spheres of innovation (technological creativity), business (economic creativity) and culture (artistic and cultural creativity) into one another, in more intimate and more powerful combinations than ever" (Florida, 2002, p. 201).

Copyright Industries: "...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)

Content Industries: "...industries that create and disseminate mass market information and cultural products in their various forms" (OECD, 2009, p. 116)

In the following section the emphasis is not so much on the conceptual subtleties that result from different focal points of the CIs (Box 2.1) ; in the end, this is mostly a matter of naming and branding, or, as Potts et al. (2008, p.2) put it: "*Industries do not actually exist in microeconomic theory...What exists, of course, are agents, prices, commodities, firms, transactions, markets, organizations, technologies and institutions.*"

Having said this, our focus will be on those microeconomic sector specificities that delineate the creative industries from standard or 'humdrum' industries. Irrespective of the large diversity within the CIs, their activities share some economic properties that make them distinct from other sectors of the economy (Caves, 2000). A common factor is the very similar characteristics of the respective goods and services they produce.

2.1 Properties of CI products

The distinctiveness of the CIs is not exogenous, but inherent to the kinds of goods and services they produce. The starting point is thus a characterization of CI products.

CI products can typically be classified as experience goods: their quality cannot be observed in advance, instead it can only be ascertained upon consumption – the proof of the pudding is in the eating. As a consequence, decisions on first-time consumption are hard to make and are rather influenced by reputation and standing. Each experience has subjective and idiosyncratic components; the price elasticity of demand is typically low.

While the concept of experience goods is tied to the individual level, CI-products are typically symbolic goods, the value of which evolves from social interactions. The merits of

symbolic goods are not so much contained in physical properties, or even in intangible qualities of a specific good or service, rather they are derived from social or cultural norms (Bilton, 2007, p. 138). Utility is generated by imitating others or, alternatively, by distinguishing oneself from others.

Closely related to the former we note that CI-products often have a positional character. In the case of so-called positional goods, the utility of consumption depends on how much one has in comparison to anyone else. The ranking is key and boosts one's social status relative to others. Parameters such as exclusiveness, uniqueness and prestige enter the preference function.

A common property of experience goods, symbolic goods and positional goods is that their value is mostly determined by intangible elements, while the physically tangible element, the medium itself (e.g. cloth, paper, or the form of digital data storage) is of mostly negligible value. Creative goods and services carry a significant amount of emotional or aesthetic content and embody some form of intellectual property, be it a beautiful design, a touching theatre performance or a sophisticated housing concept.

Furthermore, with some of the creative products, mostly services, the direct interaction between the producer and the client is of key importance. For instance, the value of a festival, an exhibition or a theme restaurant, only unfolds on the spot (Kooyman, 2010, p. 31). Clearly, these products classify as non-tradables. To the extent that these products are durable or easy to reproduce, they give rise to protection of copyright and intellectual property (Towse, 2003).

2.2 Sector specificities

As Caves (2000) notes, the notion of symbolic representation, originality and style gives rise to a very great degree of product differentiation. There is an abundant supply of creative inputs and these may be combined in various ways so as to create emotional, aesthetic or symbolic content. As a result of this *infinite variety*, operation takes place on a small if not tiny ('nano') scale. The production of creative goods usually ranges from single items (e.g. architecture) to low quantities (e.g. interior design). It is the unique value and originality of an idea that prompts customers to pay a premium price on otherwise functional substitutes. Textbook economics refer to this type of market as monopolistic competition. Though the environment is hyper-competitive, competition is not so much driven by prices; instead, the competitive advantage of CI-firms is defined in terms of product quality, originality, customization and service.

At the same time, creative products develop without a common understanding of quality criteria. The value of meaning or the shaping of identities is elusive and it is difficult (if not impossible) to capture by market mechanisms alone. Instead, value is formed in a social context. To that effect the special characteristics of CI products give rise to some CI sector specificities which become manifest in a distinct business model in the individual CI firm and a distinct market structure in the aggregate of CI firms (Unctad, 2008, chapter 3). Above all, CI firms operate within complex social networks and CI activities are strongly organized around functional clusters based on temporary and episodic collaborations (Potts et al., 2008). Several intertwined reasons account for this kind of unstable but extremely flexible and creative business environment in the creative industries. Supply as well as demand side effects seem to play important roles for this sector's strong dependence on networks and cooperation.

Since there is no accounting for taste, consumers' reactions to CI products are neither known beforehand, nor easily understood afterwards. *De gustibus non est disputandum*. Instead, consumer satisfaction is highly subjective and is sure to change over time implying a considerable amount of uncertainty about how a new creative good or service will be valued by the market.

In sharp contrast to humdrum consumer goods, ideas and symbols are created, transformed and manipulated in the social sphere. The value of a good song or an exciting computer game often only unfolds in the interactive community. Whether some creative product is perceived as 'hot or not' may not depend on the producer only, but also on the customers and the media involved. In order to be successful, companies need to identify new trends, which usually emerge from a complex negotiation process with and within a community. It is through networks that these companies learn to understand and shape these processes (Hearn et al., 2007 and Potts et al., 2008).

So as to mitigate vast uncertainties of demand, multiple instruments and procedures with respect to quality control have been established, such as exhibitions, prizes, awards or peer-reviews. For producers of creative goods and services it is vital to be involved in these communities and it matters that one moves in the right circles. The business environment is fast-paced and constantly changing. It is subject to quickly-changing consumer preferences of trend-setting people. Product life cycles are short, for once a product is mainstream it ceases to provide distinctiveness.

Moreover, not only is symbolic value created in the community, but - due to network externalities - so is practical value (Dayton-Johnson, 2000). Network externalities prevail whenever the utility of a product increases with the number of users, i.e. when the consumer's value of consumption increases when another consumer has a compatible good. Examples include all kinds of information and communication technologies (the archetype being telephone networks) but also typical CI-products such as computer games, especially their online versions. Likewise, consumers may also benefit indirectly from so-called cross-product externalities and commercial externalities if and to the extent that complementary goods - such as hardware, software and related services - become cheaper and more readily available. Since these kinds of externalities tend to be strong in many segments of the creative industries, the producers of creative goods and services should also have a strong motivation to engage in cooperative behaviour and, accordingly, engage in networks and clusters.

The challenges induced by demand uncertainty and short product cycles are aggravated when the CI-product of concern is a complex one, the production of which requires diversely skilled inputs. For instance, in the performing arts there is a wide range of necessary skills to make possible the production of a theatre play or an opera performance and the same can be said with regard to more technology-based CI-goods from the audiovisual domain or new media. Dependency on complementary skill inputs for the production of such complex goods constitutes the so-called motley crew principle.

In terms of economic theory the underlying production function of these goods is classified as limitational, meaning that the diverse skill inputs cannot be substituted for one another, but that each one must be at hand and perform at some minimum level to produce a valuable outcome. Time is of the essence for the design, implementation and organization of complex and oftentimes short-term projects. On the side of the CI firm, network-based production modes may therefore serve as a kind of insurance device, (i) to find the right people on time and (ii) to rate their talent and performance *ex ante*. The necessity of doing so originates not

only from tight time constraints, but is also reasonable in the face of so-called winner-takes all markets: small differences in originality and proficiency can yield large differences in financial success.

Nonetheless, simple luck may also often be a key to success – meeting the right people at the right place at the right time. Moving in (large) open networks is not so much a 'way of life' of creative entrepreneurs, but rather the most effective way of doing CI business, a lot of which boils down to identifying the latest trends and tracing the hottest talents. In the same way, new creative products need to be exposed to the creative community, in particular to its gatekeepers and trendsetters.

Finally, for the creative individual omnipresence is a decisive factor in finding employment. Those individuals in particular who stick to the orthodox art for art's sake face a high degree of uncertainty with respect to their career perspectives. The freedom not to surrender to market forces, but to adhere to intrinsic motives (expression of identity, originality etc.) comes at the expense of job security, unsteady and mostly low earnings. To balance income risk and to make a living, many of the creatives hold multiple jobs, both within and outside the creative economy. Instead of regular and possibly even full-time employment, typical employment patterns in the creative industries involve part-time work, temporary contracts, and freelance jobs (Throsby, 2001).

2.3 In search of a statistical concept of the creative industries

In light of the definitional fuzziness of the CI-concept, the plethora of statistical treatments of it comes as expected. The creative industries can be defined in terms of what they produce, how they do it and with a focus on the subject (i.e. who produces).

2.3.1. Classification by industrial sectors

The term creative industries was first introduced by British policy makers in the early 1990s as a way of integrating sectors which transform creative intangible inputs into significant economic and social wealth (Cunningham, 2007). A classification along the lines of industrial sectors features two main advantages. Firstly, policy makers are still fond of sectoral classification schemes since these are easier to administer, at least at first sight. The failure to come up with an unequivocal sectoral labelling system arguably makes a substantial contribution to the lack of appropriate CI policy agendas. Secondly, a measurement framework along industrial classifications is particularly suitable to show this sector's primary economic effects (i.e. its contribution to aggregate employment, value added, growth...) and to benchmark its performance against other sectors of the economy. This proves particularly true for any international benchmarking exercises such as in large parts of chapter 3 in this report, because industrial classification schemes are harmonized across countries. The British Department for Culture, Media and Sport (DCMS) subsumes 13 industries under the heading of creative industries (Table 2.1).

At the same time, industrial classification schemes fall short of showing the CIs' economic impact, even their primary economic impact. A large share of creatives finds employment outside dedicated CI sectors. Not all goods and services produced in these sectors may have a creative content, nor are all of the specific activities and tasks particularly creative. Of course, this caveat applies to any interdisciplinary and cross-sectional matter. In response to such criticism, Pratt (2004) refined the sectoral classification by introducing the value chain approach. In doing so, he alleviates the fundamental problem of squeezing a cross-sectional matter into a sectoral classification system, but does not solve it.

Table 2.1: DCMS Creative Industries Measurement Framework

Mapping Document Chapter	Sector	NACE Rev. 1.1	Description	Proportion of Code taken
1	Advertising	74.4	Advertising	100%
2	Architecture	74.2	Architecture and engineering activities and related technical consultancy	25%
3	Art & Antiques	52.48	Other retail sale in specialised stores	5%
		52.5	Retail sale of second-hand goods in stores	5%
4	Crafts	Majority of businesses too small to be picked up in business surveys		
5	Design	No codes match this sector		
6	Designer Fashion	17.7	Manufacture of knitted and crocheted articles	0.5%
		18	Wearing apparel; dressing and dyeing of fur	0.5%
		19.3	Manufacture of footwear	0.5%
		74.87	Other Business activities n.e.c.	2.5%
7	Video, Film, & Photography	22.32	Reproduction of video recording	25%
		74.81	Photographic activities	25%
		92.1	Motion picture and video activities	100%
9 & 10	Music and the Visual & Performing Arts	22.14	Publishing of sound recordings	100%
		22.31	Reproduction of sound recording	25%
		92.31	Artistic and literary creation and interpretation	100%
		92.32	Operation of arts facilities	100%
		92.34	Other entertainment activities n.e.c.	50%
		92.72	Other recreational activities n.e.c.	25%
11	Publishing	22.11	Publishing of books	100%
		22.12	Publishing of newspapers	100%
		22.13	Publishing of journals and periodicals	100%
		22.15	Other publishing	50%
		92.4	News agency activities	100%
8 & 12	Software, Computer Games & Electronic Publishing	22.33	Reproduction of computer media	25%
		72.2	Software consultancy and supply	100%
13	Radio & TV	92.2	Radio and television activities	100%

Source: Wilkinson (2007, p. 33).

The DCMS approach has met with several criticisms. Some argue that it is too narrow in scope in that it excludes some primary cultural domains such as heritage, libraries and museums. Some argue that it is too wide in scope and especially question the creative content of software consultancy and supply. Some challenge its usefulness for international benchmarking exercises since the weighting of industries should be country-specific (Power and Nielsén, 2010). This report still sticks to the DCMS definition and in doing so it is one of the very few studies that do not come up with a new statistical definition of the CIs. We argue that:

- 1) the DCMS definition enjoys a first-mover advantage, it is well known and broadly acknowledged world-wide.
- 2) a statistical definition of an industry will always remain fuzzy when its conceptual foundations are fuzzy at the outset. Being aware that any attempt to come up with

an ultimate definition is likely to end in failure, one might as well simply adopt generally accepted standards.

- 3) the primary economic impact of the CIs is, after all, limited. It is certainly important to make visible the broad trends in economic performance of the CIs, but these are less sensitive to under- or overestimation of initial levels.

The introduction of NACE Rev. 2 in 2008 allows a more detailed inspection of the structure of the creative industries. For instance, specialised design activities and photographic activities are introduced as separate groups. A second major change in terms of delineation concerns the publishing sector which was shifted to section J ("information and communication"). As a result, the new NACE scheme classifies all CI subsectors as service industries. A major drawback that inevitably comes with the introduction of a new classification system is that there is a structural break in time series. This report traces the development of the creative industries over time (i.e. until the year 2007) on the basis of the NACE Rev. 1.1 classification (see Technical Appendix). The most recent snapshot on the status of the creative economy is based on NACE Rev. 2 data. Table 2.2 contains the classification of creative industries based on NACE Rev. 2.

Table 2.2: Classification of creative industries based on NACE Rev. 2

Industry		Proportion of Code taken
NACE Rev. 2	Description	
J58	Publishing activities (publishing of books, periodicals and software publishing)	100%
J59	Motion picture, video and television programme production, sound recording and music publishing activities	100%
J60	Programming and broadcasting activities	100%
J62	Computer programming, consultancy and related activities	100%
M711	Architectural and engineering activities and related technical consultancy	25%
M731	Advertising	100%
M741	Specialised design activities	100%
M742	Photographic activities	25%
M743	Translation and interpretation activities	100%
R90	Creative, arts and entertainment activities	100%

Source: based on Söndermann (2009).

2.3.2. Classification by occupation

The previous section has made it clear that a definition of the subject matter only in terms of industrial classification systems would be too narrow in scope. In the first place, as we shall see, there are more creative specialists employed outside the CIs than there are inside, hence a sectoral concept systematically underestimates the weight of the CIs in aggregate employment. In the second place, a narrow definition along the lines of economic activities is likely to come up with only sectoral policy measures, for instance to enhance the competitiveness and innovation performance of the CIs. But the recent interest of policymakers in the CIs is in particular and to a large extent motivated by their role in enabling downstream sectors to innovate and in disseminating new knowledge and technology throughout the economy. Finally, the CIs are increasingly seen as a role model for initiating innovations. Hence, a wider definition of the CIs would be more instrumental when it comes to policy interventions directed at the promotion of an innovation society. Acknowledging that the definition of the subject matter has a great bearing on the type of policy recommendations one eventually arrives at, parts of this report also draw on a statistical definition that is based on creative occupations.

Florida (2002) introduces the concept of the 'creative class' which measures the number of people with creative occupations. This concept distinguishes between (i) people who make up the 'super creative core', (ii) those who qualify as 'bohemians', and (iii) those who are classified as 'creative professionals' (Table 2.3, upper panel).

Table 2.3: Definitions of the creative class

	Florida (2002):
	1. Super creative core
	Computer and mathematical occupations
	Architects and engineers
	Scientists (life science, physical science, social sciences)
	Teachers and librarians
	Occupations in the fields of sports and media and in some parts of arts and entertainment
	2. Bohemians
	Decorators, designers
	Musicians, sculptors, singers, photographers
	Actors, authors and other writers, choreographers
	Painters and figurative artists, dancers, conductors, directors, composers
	3. Creative professionals
	Management
	Occupations in the fields of business and financial operations
	Legal occupations
	Health care practitioners and technical occupations
	High-end sales and sales management
ISCO88 code^{a)}	European Commission (2009)^{a)}
21	Physical, mathematical and engineering science professionals
221	Life science professionals
222	Health professionals (except nursing)
23	Teaching professionals
243	Archivists, librarians and related information professionals
244	Social scientists and related professionals
245	Writers and creative or performing artists
347	Artistic, entertainment and sports associate professionals
521	Fashion and other models

Note: ^{a)} International standard classification of occupations.

Source: Adapted from European Commission (2009a), p. 166.

Some scholars such as Markusen (2006) or Pratt (2008) reject Florida's concept on the grounds that the notion of creativity is too broad in the first place, and, moreover, that these occupations have little in common. For instance, a professional artist is certainly creative and one would hope that the occupational profiles of engineers and scientists leave enough room for creativity. Yet these occupations share little in common except that they are all creative in some broader sense. Markusen and Schrock (2006) suggest focusing on a narrower definition of the creative class, i.e. to reduce its coverage to artistic occupations. To some extent the European Commission (2009a) follows this approach in excluding occupations from the (narrowly defined) business world. It also leaves out technicians (Table 2.3, lower panel).

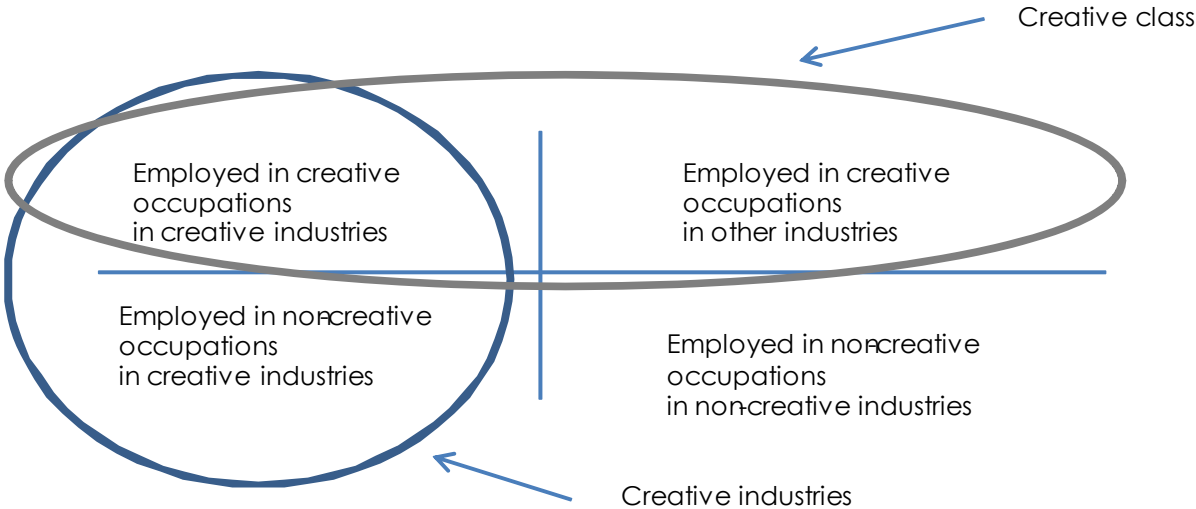
Lorenz and Lundvall (2009) refine the creative class model by adapting it to the type of activity performed. In this sense, a worker would classify as creative if she enjoys enough autonomy at her workplace to bring her own ideas to it. The fourth European Working Conditions Survey carried out in 2005 applies this version of the creative class.

Other scholars raise more fundamental concerns with respect to the creative class measure and challenge its demarcation from the familiar skill-based concepts. In fact, the definition of the creative class comprises almost all high-skilled jobs. It does not come as a surprise that a

number of empirical studies find that the creative class measure is highly correlated with human capital, as measured for instance by the share of working age population which holds a tertiary degree. Using Swedish regional data Hansen (2007) shows that the correlation between creative class and human capital is 0.94, where the latter is captured in terms of educational attainment levels. A very high correlation is also observable for Finland (0.96), Denmark (0.84) and Norway (0.85) (Andersen et al., 2010) and for US metropolitan areas (Glaeser, 2005). These high correlations indicate that a broad measure of the creative class is little different from tertiary education and raises serious doubts about how much the creative class concept actually adds to the traditional human capital measure. These high correlations raise considerable doubt as to whether the Floridian concept actually adds anything to traditional human capital measures, or, more generally speaking, to the notion of the emerging and advancing knowledge-based economy.

Nevertheless, the primary advantage of the creative class measure is that it is able to capture creative workers which find employment outside of the creative industries. Examples would include the designer who works in the car industry, or the librarian who is employed in a law firm (OECD, 2007). The concerns raised above lose some weight if data on creative industries employment is presented in a two-by-two matrix with the industry on one axis and occupation on the other (Figure 2.1). Higgs and Cunningham (2007) were the first to model such a 'creative trident' for Australia. It distinguishes between creative individuals working in the CIs, non-creative support staff working in the CIs, and creative individuals 'embedded' in industries outside of the CIs.

Figure 2.1: The creative trident



Source: WIFO illustration based on Higgs and Cunningham (2007).

2.3.3. Classification by product

Finally, a statistical definition of the CIs could take as its starting point the type of goods and services being produced and traded. This classification scheme comes very close to the conceptual idea of the CIs as outlined in section 2.1. Recently UNCTAD has made a serious effort to compile the very first global comparative database of traded goods and services which fall into the cultural and creative domains. In doing so, UNCTAD classified more than 500 items. The trade statistics presented in chapter 3.3 of this report are based on this classification.

3. Stylized facts on the creative industries in the EU

3.1 Size and evolution of the creative industries

With 6.7 million employees the creative industries in the EU accounted for 3.0 per cent of total employment in 2008. The employment share was at 3.2 in the old Member States, as opposed to 2.0 per cent in the new Member States (Table 3.1). The employment share of the creative industries is sensitive to the definition applied. When both architecture and photographic activities are fully incorporated into the classification of industries, the CI employment share stood at 3.9 per cent in total, 4.2 per cent in the EU-15 and 2.7 per cent in the new Member States.

Table 3.1: Employment of the creative industries in the EU (2008)

by subsector NACE Rev. 2		Persons employed			Distribution (in per cent)		
		EU26	EU15	EU11	EU26	EU15	EU11
<i>creative industries related to information services, of which</i>					61.6	62.2	58.2
J58	Publishing activities	999,557	845,396	154,161	14.8	14.6	16.5
J59	Motion picture, video & television programme prod., sound recording & music publishing act.	415,376	371,096	44,280	6.2	6.4	4.7
J60	Programming and broadcasting activities	222,737	166,272	56,466	3.3	2.9	6
J62	Computer programming, consultancy & related act	2,510,230	2,221,344	288,886	37.3	38.3	30.9
<i>Creative industries in professional services, of which</i>					28.7	28.2	31.8
M711	Architectural & engineering activities & related technical consultancy	2,499,147	2,147,128	352,019			
	Architectural & engineering activities & related technical consultancy (weighted)	624,787	536,782	88,005	9.3	9.3	9.4
M731	Advertising	1,004,955	854,277	150,678	14.9	14.7	16.1
M741	Specialised design activities	165,704	150,002	15,702	2.5	2.6	1.7
M742	Photographic activities	171,430	147,360	24,070			
	Photographic activities(weighted)	42,858	36,840	6,018	0.6	0.6	0.6
M743	Translation and interpretation activities	95,081	58,539	36,542	1.4	1	3.9
R90	<i>Creative, arts and entertainment activities</i>	650,768	557,303	93,465	9.7	9.6	10
	total creative industries employment (weighted)	6,732,052	5,797,850	934,202	100	100	100
	total creative industries employment (unweighted)	8,734,985	7,518,716	1,216,268			
	employment share of the CIs (weighted)	3.0	3.2	2.1			
	employment share of the CIs (unweighted)	3.9	4.2	2.7			

Note: EU-26 (EU-11) refers to EU-27 (EU-12) excluding Malta; industrial classification is based on NACE Rev. 2 (see Table 2.2).

Source: Structural Business Statistics (SBS), EU Labour Force Survey (LFS) for NACE Rev. 2 section R. and AMADEUS database - WIFO calculations.

Creative industries related to information services accounted for the bulk of total employment in the creative industries, viz. 62 per cent, or 1.8 per cent of all EU employment. This subsector is heavily dominated by computer programming, consultancy and related activities (37.3 per cent), followed by publishing (14.8 per cent). Creative industries in professional services represented 29 per cent of total CI employment, with 15 per cent falling

on advertising. The core creative arts and entertainment activities accounted for only 10 per cent of total CI employment. Figure A.1 in the Appendix further details the evidence at the level of individual Member States.

In terms of employment growth the creative industries feature as a very dynamic industry. Between 1999 and 2007, the number of employees in the creative industries raised from 4.9 million in 1999 to 6.2 million in 2007. CI employment grew by an average of 3.5 per cent per annum, compared to only 1 per cent in the overall EU-27 economy. In the same period the CI employment share increased from initially 2.3 per cent to 2.7 per cent, with some variation in growth performance between individual Member States (see Table A.1 in the Appendix). In particular, the EU-12 countries (i.e. Baltic States, Romania and Bulgaria, and to a lesser extent the remaining new Member States) exhibit higher than average increases in their CI employment shares.

However, the variation of growth performance across sub-sectors was much more pronounced (Table 3.2). Software consulting and supply showed the highest employment growth of all sub-industries (+5.2 per cent on average between 1999 – 2007), while publishing did not grow much at all. The audiovisual sector (including media, arts, entertainment, and news agencies) and architecture also grew faster than overall employment in the EU-27.

Table 3.2: Average annual employment growth of the EU creative industries, 1999-2007 in per cent; by subsector

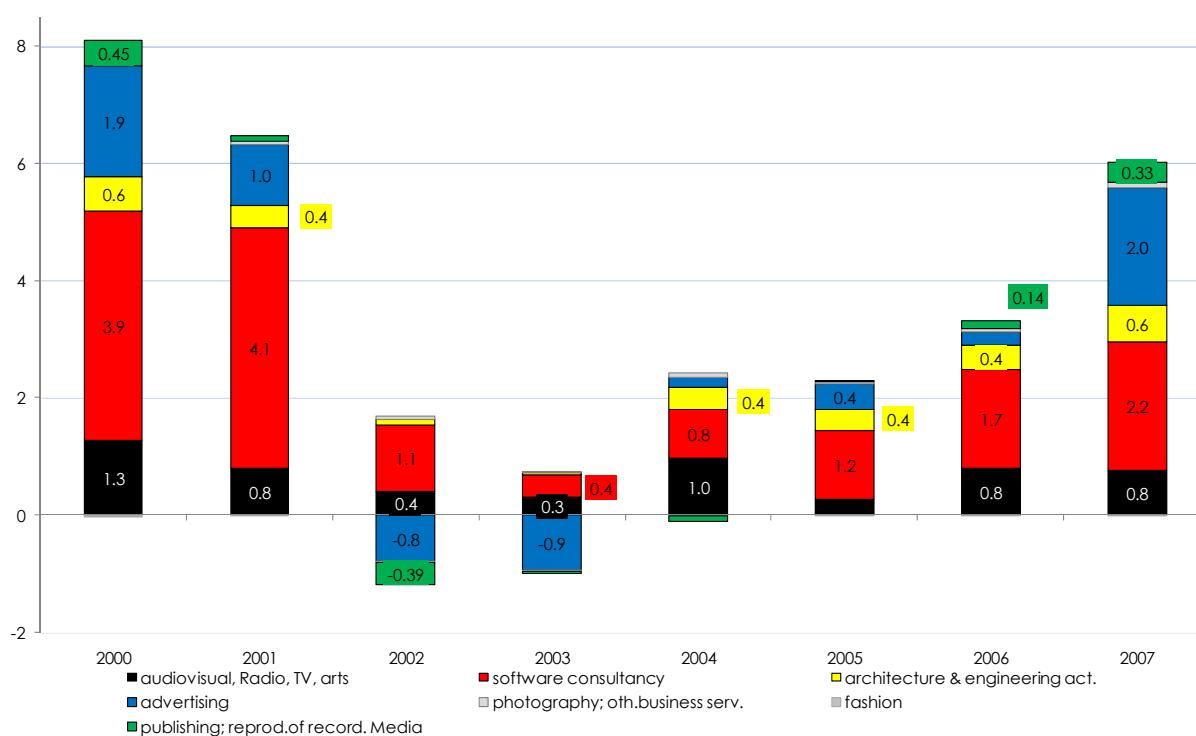
NACE Rev. 1.1	Description	EU27	EU15	EU12
22.1+22.3	Publishing + reprod.of recorded media	0.1	0.1	0.2
72.2	Software consultancy	5.2	4.6	11
74.2	Architecture	2.9	2.6	4.7
74.4	Advertising	1.7	0.8	8.4
92.1-92.4 (excl. 92.33), 92.72	Motion picture and video activities, Radio and television activities, arts & entertainment, news agencies	2.7	2.5	3.8
17.7, 18, 19.3, 74.81, 74.87	Other subsectors of the creative industries	0.1	0.1	0.2
	Total Creative industries	3.5	3.2	5.4

Note: Industrial classification is based on NACE Rev. 1.1 (see Table 2.1).

Source: Structural Business Statistics (SBS); refer also to the Technical Appendix – WIFO calculations

Figure 3.1 gives a more detailed picture by decomposing year-on-year growth of total CI-employment into the contributions from the different subsectors. As has been shown before, software consultancy and supply is both the largest subsector in terms of employment, as well as the most dynamically growing one. To that effect this subsector is the driving source of employment growth in the creative industries. On average about half of CI employment growth between 1999 and 2007 in the EU is attributable to the employment dynamics in software. This finding supports recent research for the UK; just 7.5 per cent of 'high-growth' businesses accounted for the overall employment growth in the creative industries in the three years to 2008. Software, computer games, and electronic publishing companies accounted for 45.3 per cent of all these high-growth creative businesses (NESTA, 2009). Figure 3.1 also shows that employment in the advertising industry is most responsive to variations in the business cycle. Accordingly, this industry is a significant source of CI employment dynamics.

Figure 3.1: Subsector contributions to employment growth in EU-27 creative industries in percentage points



Note: Industrial classification is based on NACE Rev. 1.1 (see Table 2.1).

Source: Structural Business Statistics (SBS); refer also to the Technical Appendix – WIFO calculations.

The increasing importance of the creative economy becomes even more evident when it is measured in terms of creative occupations, i.e. professions that are 'creative' in essence, no matter whether or not they belong to the creative industries. These 'knowledge workers' produce intangible assets such as ideas, knowledge, and information that increases firms' value added (see section 2.3.2). A large number of creative occupations are embedded outside the creative industries. In the EU-15 in 2008, 63 per cent of creative professionals were employed in 'non-creative' sectors, i.e. in industries other than information and communication services, professional, scientific, and technical activities and the arts, entertainment, and recreation (Table 3.3).

Owing to the wider definition of this concept, employment in the creative class outperforms employment in the creative industries by far. Nevertheless, these two classifications of the creative economy – creative class vs. creative industry – are highly correlated and yield very similar results with respect to the ranking of country groups. Again, the Nordic countries, as well as the UK and the Netherlands have the highest shares of creative professional (Figure A.2 in the Appendix).

Table 3.3: Intensity and distribution of creative occupations in EU-15, 2008

in per cent

Sector Nace Rev. 2	Description	Share of creative occupations in total emp.	Distribution of creative occupations across sectors
A	Agriculture, Forestry and Fishing	1	0
B+C	Mining and Quarrying + Manufacturing	7.4	16
D+E	Electricity, gas + water supply, sewerage and waste management	7.8	1
F	Construction	3.8	4
G	Wholesale & retail trade	2.9	6
H	Transportation and storage	1.3	1
I	Accommodation and food service activities	0.4	0
J	Information and communication services	34.9	14
K	Financial and insurance activities	5	2
L	Real estate activities	3.5	0
M	Professional, scientific and technical activities	23.2	16
N	Administrative and support service activities	3.4	2
O	Public administration and defence	6	6
P	Education	4.4	4
Q	Human health & social work activities	13.8	19
R	Arts, entertainment and recreation	34.8	7
S+T+U	Other services + households + extraterritorial organisations	5.1	2
	Total	7.7	100

Note: Creative occupations are defined as outlined in Table 2.3 (lower panel), but exclude teaching professionals. All numbers are weighted to reflect national population weights.

Source: EU Labour Force Survey 2008 - WIFO calculations.

Calculations based on the EU Labour Force Survey for the EU-15 show that the core creative occupations grew by an average of 3.1 per cent per year between 2002 and 2008 (Table 3.4). The corresponding employment share of the core creative occupations increased from 6.6 to 7.7 per cent during the same period. The highest employment growth can be observed for artistic and entertainment professionals – averaging 5.7 per cent per year – followed by social science and related professionals (5.0 per cent), mathematical and statistical professionals (4.0 per cent), computing professionals, engineers and architects (3.2 per cent).

Table 3.4: Evolution of the core creative occupations between 2002 and 2008

Occupation ISCO 88 Description		EU -15			EU-7		
		Persons employed in 1000s 2002	Persons employed in 1000s 2008	Average annual growth rate in per cent	Persons employed in 1000s 2002	Persons employed in 1000s 2008	Average annual growth rate in per cent
211	Physicists, chemists and related professionals	260	287	1.6	23	31	4.7
212	Mathematicians, statisticians and related professionals	37	47	4.0	8	8	1.7
213	Computing professionals	1,528	1,845	3.2	84	124	6.8
214	Architects, engineers & related professionals	3,088	3,724	3.2	186	219	2.8
221	Life science professionals	332	298	-1.8	25	33	4.8
222	health professionals	1,769	1,978	1.9	129	150	2.6
243	Archivists, librarians & rel. information prof.	198	193	-0.5	24	29	3.3
244	Social science & related professionals	1,057	1,413	5.0	98	116	2.9
245	Writers and creative or performing artists	1,016	1,175	2.5	73	85	2.7
347+521	Artistic, entertainment & sports assoc.	897	1,250	5.7	46	60	4.5
	total creative occupations	10,183	12,211	3.1	695	856	3.5
	employment share of the creative occupations	6.6	7.7		5.2	6.0	

Notes: The creative class is defined as explained in Table 2.3 (lower panel), but excludes teaching professionals. EU-7 includes CY, CZ, EE, HU, LT, LV and SK. Source: EU Labour Force Survey - WIFO calculations.

3.2 Drivers of the creative economy

A number of demand and supply factors have contributed to the rise of the creative industries. Key factors that drive the supply side of the creative economy include innovation, information and communication technologies, talent, and skills. Demand side factors include growing wealth (i.e. GDP per capita), leisure time and disposable household income. Macroeconomic performance, and the initial status of the creative industry in the economy also seem to play a role.

Table 3.5: Rate of high-skilled employees^{a)} in the EU, 2008

By sector, in per cent

NACE Rev. 2	Description	Share of workers with a tertiary degree ^{a)}
A	Agriculture, Forestry and Fishing	5.9
B+C	Mining and Quarrying + Manufacturing	18.1
D+E	Electricity, gas + water supply, sewerage and waste mangm.	21.9
F	Construction	12.7
G	Wholesale & retail trade	16.2
H	Transportation and storage	13.6
I	Accommodation and food service activities	11.2
J	Information and communication services	51.6
K	Financial and insurance activities	44.1
L	Real estate activities	30.7
M	Professional, scientific and technical activities	57.8
N	Administrative and support service activities	18.0
O	Public administration and defence	36.3
P	Education	63.7
Q	Human health & social work activities	39.1
R	Arts, entertainment and recreation	35.5
S+T+U	Other services + households + extraterritorial organisations	18.7
total		26.3

Note: Measured by levels 5 and 6 of the International Standard Classification of Education (ISCED). All numbers are weighted to reflect national population weights.

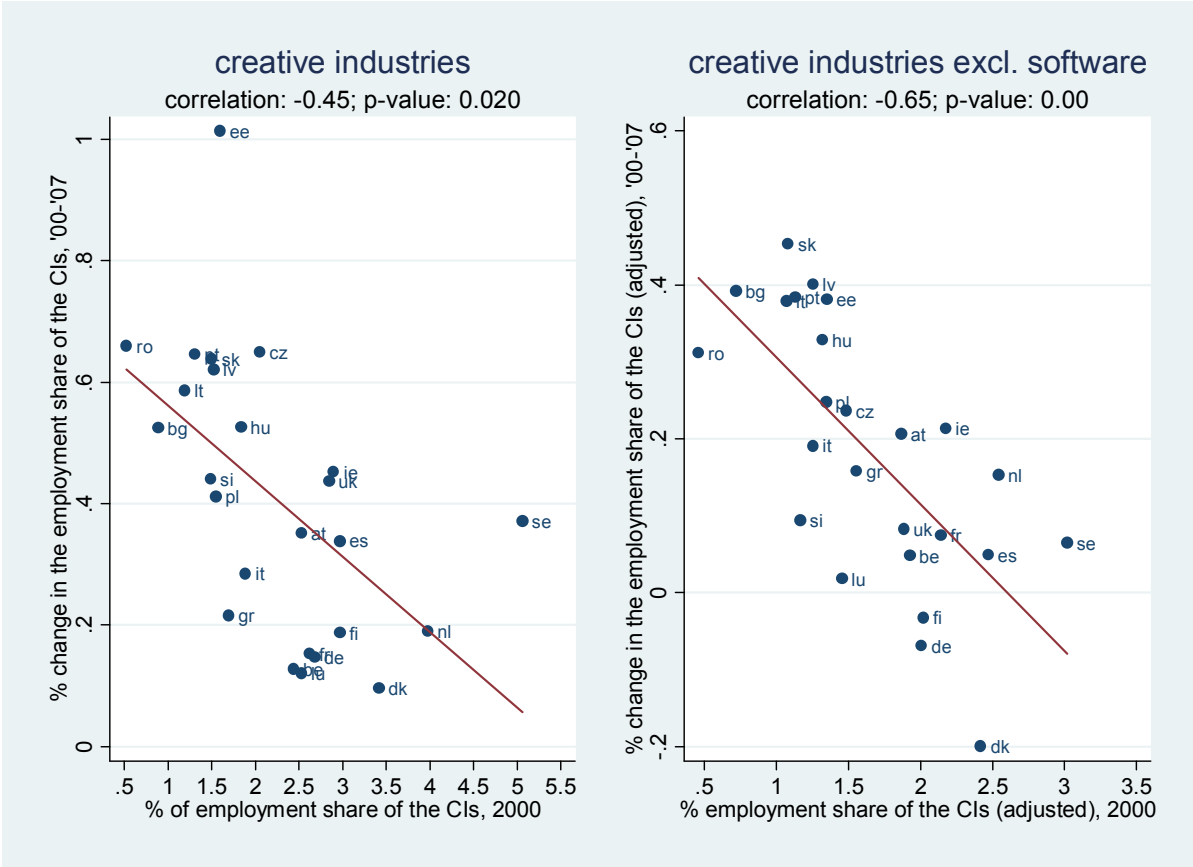
Source: EU Labour Force Survey 2008 – WIFO calculations.

Well-educated and skilled workers are the key resource in the creative economy. Indeed, evidence based on the EU labour force survey for 22 EU countries shows that Information services (NACE Rev. 2 section J, of which the associated creative industries account for more than 70 per cent of industry employment) are characterised by the third largest proportion of persons with tertiary education (Table 3.5). Every second worker in information services holds a tertiary degree as compared to only 26 per cent for the total economy. Professional, scientific and technical activities rank number two, with a share of 58 per cent. Creative business services such as architecture, advertising and design are affiliated to this sector. About every third employee in arts, entertainment and recreation activities holds a tertiary degree. The rate of formally highly educated workers is highest in the education sector (64 per cent).

Other supply-side factors include the rapid advance of digital technologies, the globalisation of networks, and the de-regulation of media. Digital distribution of recorded music and other media via the internet has created a whole new business model (Stoneman, 2010). For instance, the rise in online advertising has changed the entire advertising industry, leading to declining sales for traditional advertising media. In four out of 15 EU countries, the share of online advertising already stands at 20 per cent or more (IAB Europe, 2009). A recent study on the European software industry reveals that the rapid growth of online advertising is being driven by the growth of the worldwide online population, broadband access development,

and an increase in time spent online (Pierre Audoin Consultants SAS (PAC), 2009). The shift to digitisation, as well as the increase in broadband access, have decreased the cost of media distribution, in particular for recorded music and films. According to the International Federation of Phonographic Industries (IFPI, 2009) global digital music sales are growing rapidly, whereas physical music sales have fallen in the last five years. Recent unpublished data show that in the UK, revenues from digital sales outstripped physical sales for the first time in 2009. However, the EU-15 is lagging behind both the US and Japan in the diffusion of digital music distribution. In the EU-15 the share of digital music in retail sales is estimated at 12 per cent for 2009, compared to 33 per cent in the US and 19 per cent in Japan (IFPI, 2009). Similarly, the EU is well behind the US in both online advertising and the deployment of broadband (IAB Europe, 2009). Correlations based on aggregate country data show a strong relationship between broadband penetration and the size of the creative industries (with a correlation of 0.80 for 27 EU countries in 2007). In addition, there is a significant correlation between the increase in broadband penetration and the increase in the employment share of creative industries across the EU countries.

Figure 3.2: Catch-up effects, 2000-2007



Note: Industrial classification is based on NACE Rev. 1.1 (see Table 2.1).

Source: Structural Business Statistics (SBS); refer also to the Technical Appendix– WIFO calculations

The demand-side factors include the increase in available leisure time and disposable household income (Andari et al., 2007). Unreported New Cronos data on the structure of household consumption expenditures for nine EU countries¹ reveals that household spending

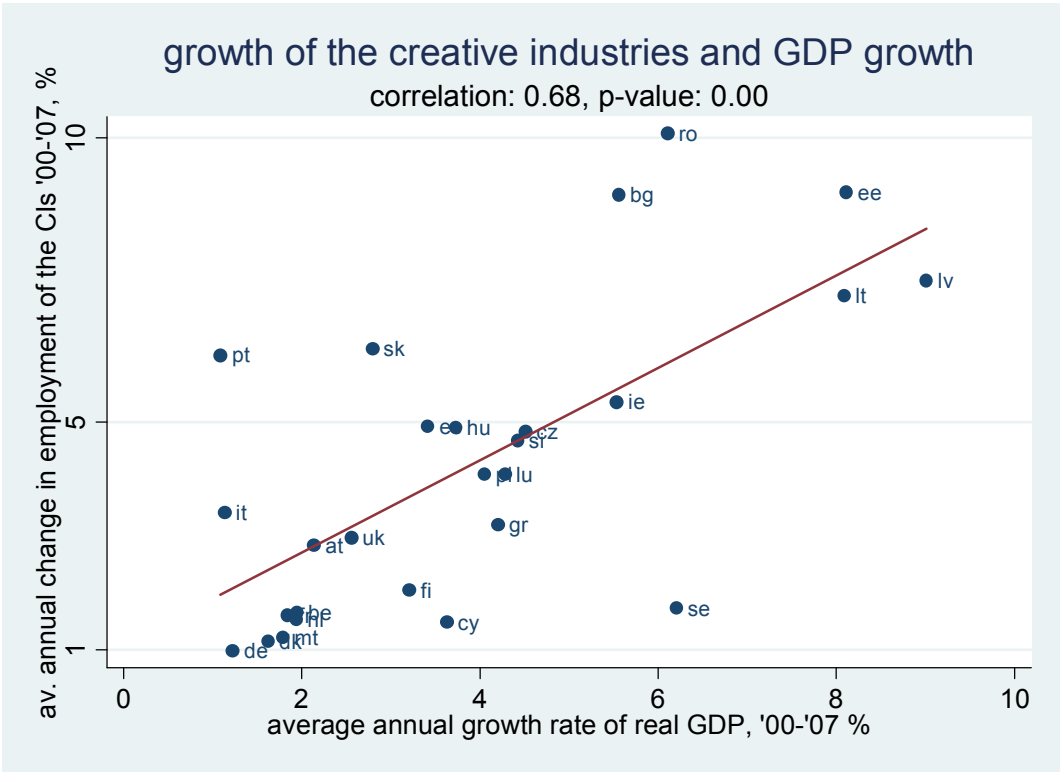
¹ The nine EU countries are Belgium, Greece, Spain, France, Italy, Luxembourg, the Netherlands, Portugal, and the United Kingdom.

on communication increased steadily due to rising expenditures for internet connection services. Similarly, spending on cultural services increased from 1.0 to 1.3 per cent between 1999 and 2005. Note that cultural services include license fees for television equipment and subscriptions to television networks. In 2005, spending on cultural services surpassed traditional media (i.e. books and newspapers) in the same nine countries. Between 1998 and 2005 there was even a decline in household consumption of these products, further indicating that internet media are replacing traditional media. Similar trends patterns can be observed in the structure of US household consumption spending (Beyers, 2008).

Another explanation of the fast growth of the creative industries in the EU is that a number of less advanced EU countries are starting to catch up to the more developed Member States (see Table A.1 in the Appendix). The scatter plots in Figure 3.2 show that EU countries with a low initial employment share in creative industries exhibit a significantly stronger increase in the same employment share between 2000 and 2007 (with a correlation of -0.45). This relationship remains robust and highly significant when software consultancy and supply is excluded from the sample.

More generally, the catch-up effects point at the role of macroeconomic growth for the rapid development of the creative economy. Between 1999 – 2007, EU countries with high growth rates of GDP experienced a higher than average increase in their employment share in creative industries (Figure 3.3).

Figure 3.3: Relationship between GDP growth and growth of CI employment, 2000-2007



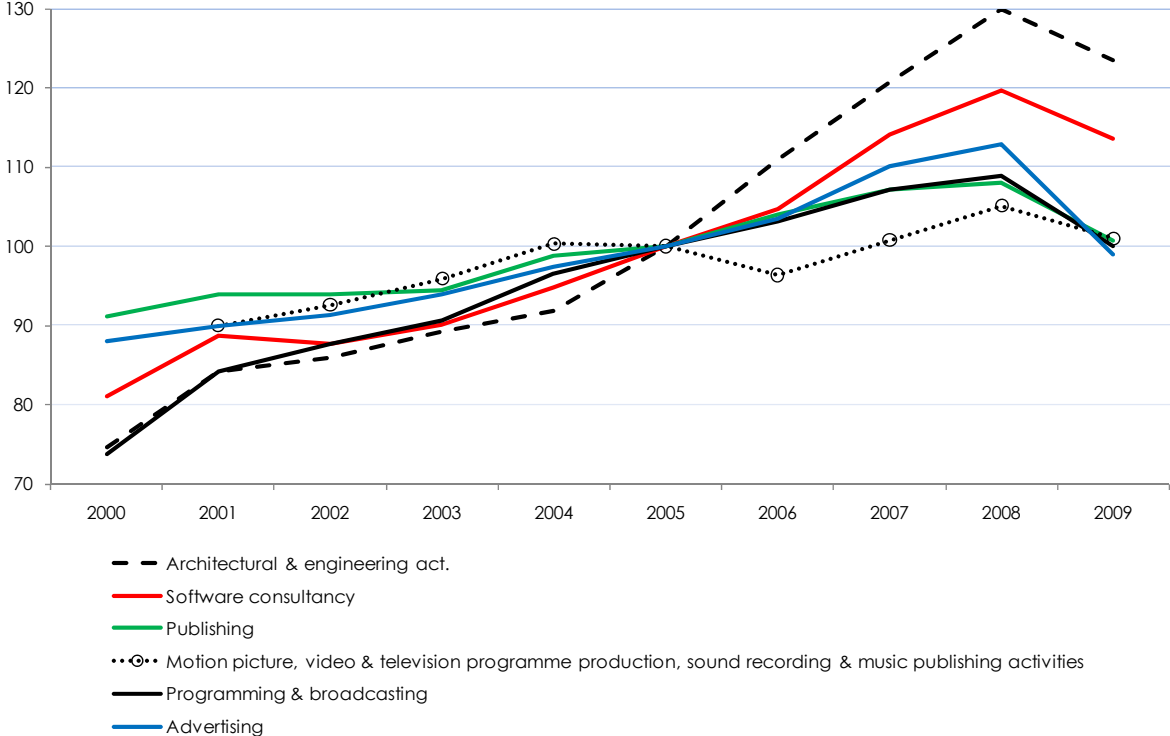
Note: Industrial classification is based on NACE Rev. 1.1 (see Table 2.1).

Source: Structural Business Statistics (SBS); refer also to the Technical Appendix – WIFO calculations

More recently the economic downturn put an abrupt end to the advancement of the creative industries pointing at their high dependency on business cycles. There are various reasons that explain why creative industries have been affected more severely by the recession than other sectors. Firstly, falling consumer spending is expected to have a large

impact on those industries that sell a large portion of their output to final demand (i.e. end-users), such as arts and entertainment and the audiovisual sector. It is well known that decreases in consumer spending have a high impact on creative goods and services characterised by high income elasticity, such as opera tickets and other luxury items. Secondly, creative industries are affected indirectly as a result of intensive supply-chain linkages to other sectors (see section 4.2). This particularly concerns creative industries that heavily rely on business-to-business transactions with sectors that are badly shaken by economic downturns. Most noteworthy, many firms have cut their advertising budgets during the recessionary period. To that effect the advertising industry experienced the strongest decrease in turnover among all CI subsectors of about -12.6 per cent between 2008 and 2009 (Figure 3.4). Publishing turnover decreased by 6.8 per cent. While software consultancy and architecture were less affected (5.0 per cent decline), these segments nevertheless faced reductions in turnover in 2009 for the first time in the last 10 years.

Figure 3.4: Evolution of creative industries' turnover in the EU-27, 2000 – 2009



Note: Industrial classification is based on NACE Rev. 2 (see Table 2.2).

Source: Structural Business Statistics – Wifo calculations

3.3 International trade of creative products

At the international level, sectoral competitiveness is invariably and closely related to trade performance. In the context of the creative industries it is important to highlight that the EU, and its Member States, have chosen to preserve their capacity to define and implement policies for the purpose of preserving cultural diversity when joining the General Agreement on Trade in Services (GATS). The question of trade is therefore not a straightforward one. While a number of studies, policy documents in particular, point at the growing importance of trade in creative industry products, and the sound export performance of the creative industries, this issue has until now almost never been studied in a thorough way. Notable

exceptions are the contributions of Disdier et al. (2010) and the Unctad reports (2008, 2010) on the creative economy.

Ignorance with respect to CI trade issues has several reasons. In the first place, rigorous trade analyses of creative products requires a classification of goods and services with respect to their creative content at a quite detailed level of disaggregation. This is certainly no easy task in light of thousands of different commodities. Issues of classification get even more awkward when it comes to creative services; this is the second point to raise: services play a large part in the creative industries. The coverage of services in trade statistics generally leaves a lot to be desired and the recording of trade in creative services provides no lucky exception to this general rule. Thirdly, in the old economy consumption of creative services inevitably took place on the spot, i.e. they could largely be classified as non-tradeables. Transaction costs have substantially fallen with the development of new technologies, in particular information and communication technologies. Producers of creative content – advertisers, architects, journalists, software developers etc. – can now sell their ‘disembodied services’ (Bhagwati, 1984) across borders at far lower costs and participate in international trade. Yet the digital way of transaction undermines trade statistics which are based on customs. Fourthly, new distribution channels (e-commerce, online shopping) also have an adverse effect on the recording of trade in goods. Finally, digital technologies and compression methods for audio and video signals transform tangible physical goods into intangible products. In these days books or records can cross borders by way of a mouse-click.

The digitization has greatly advanced the trade potential of creative products. At the same time, it undermines conventional modes of distribution and record keeping. So the first reason why this report approaches trade in creative products is plain curiousness: what does the data say? Does international trade in creative products actually matter? If so, what are the main trends and trade structures and how does EU trade performance in creative products compare to countries such as the US or China? Secondly and closely related we note that trade constitutes an established policy field for supranational governance, and this report – among other things – aims to answer the question of whether or not the EU should take a more active role in CI policy, trade in creative products being one possible field of action.

3.3.1 Trade in creative goods

World exports of creative goods grew at an average annual rate of 4.2 per cent between 2002 and 2008, reaching a value of approximately €278 billion in 2008 (Table 3.6).

Table 3.6: World merchandise exports, 2002 – 2008

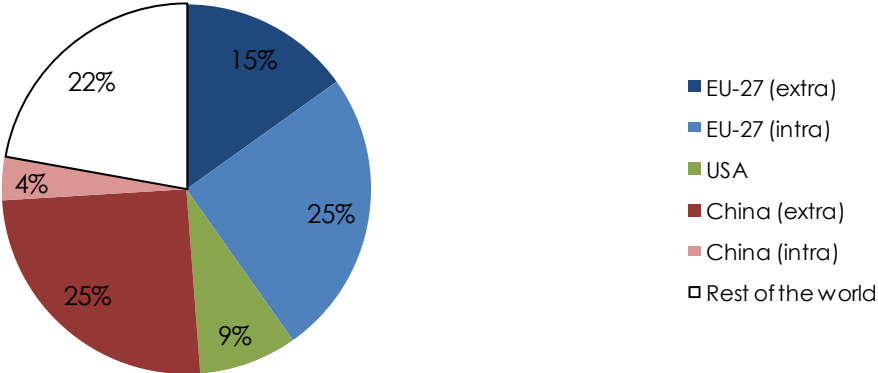
Year	All goods	Creative goods	Creative goods as a share of all goods (in per cent)
	in bn. €		
2002	6,698	218	3.2
2003	6,534	207	3.2
2004	7,224	217	3.0
2005	8,220	240	2.9
2006	9,416	259	2.7
2007	9,988	271	2.7
2008	10,771	278	2.6
Av. an. growth 02-08 (in per cent)	8.2	4.2	

Source: UNCTAD Global Databank of world trade in creative products; UN COMTRADE – WIFO calculations.

The share of creative goods in total world exports was 2.9 per cent on average during the years 2002–2008 and has been continuously falling in this time period. In other words, in spite of respectable growth rates of creative goods exports, the creative parts of the economy did not tie up with the growth dynamics of total export goods.

In 2008, three economic regions accounted for more than three-quarters of the world's exports of creative goods: a rich quarter originated from China² and 9 per cent from the US. With a share of 40 per cent, Europe is the leading world exporter of creative goods. About 60 per cent of European creative goods exports remain within the borders of the EU. Extra-EU exports of creative goods account for 15 per cent in total world exports of creative goods (Figure 3.5).

Figure 3.5: World exports of creative goods by regions, 2008



Source: UNCTAD Global Databank of world trade in creative products – WIFO calculations.

As of 2008, Europe, China, as well as the United States held a relative export advantage (Box 3.1) in extra-territorial CI exports (Table 3.7). This means that these countries' exports are more dominated by creative goods than is the case in world trade. However, the relative weight of creative goods exports shows a downward trend in the EU and in China, i.e. their relative export advantage in creative goods eroded between 2002 and 2008. The situation for the US is quite different: The country started out with a relative disadvantage in exports of creative goods, gradually improved therein, and reached a turnaround by 2006.

Table 3.7: Relative export advantage of creative goods in relation to total goods, 2002-2008

Year	EU- 27 (extra)	USA	China (extra)
2002	0.23	-0.19	1.35
2003	0.22	-0.18	1.25
2004	0.20	-0.13	1.16
2005	0.21	-0.07	1.12
2006	0.25	0.00	1.05
2007	0.23	0.03	1.00
2008	0.20	0.04	1.02

Source: UNCTAD Global Databank on world trade in creative products, UN COMTRADE – WIFO calculations

² In this report, China includes Hong Kong but not Macao. Macao figures on CI trade show too many holes and therefore this region is rigorously ignored in the analysis. This approach admittedly comes at the expense of completeness; but at least provides consistent evidence.

Box 3.1: Relative Export Advantage (REA)

The index on relative export advantage is defined as the share of a country *i*'s exports of some good *j* (x_{ij}) in total exports of this country ($\sum_j x_{ij}$) divided by the world share of good *j* ($\sum_i x_{ij}$) in total world exports ($\sum_i \sum_j x_{ij}$). The result is transformed into a natural logarithm, so that the index becomes symmetric through the origin. The REA-index takes a positive (negative) value if the first ratio is higher (smaller) than the second. A positive value indicates a relative export advantage. The value of a country's exports would be more dominated by good *j* than world exports would. Conversely, a negative value points to a relatively weak export performance of this country in the said good.

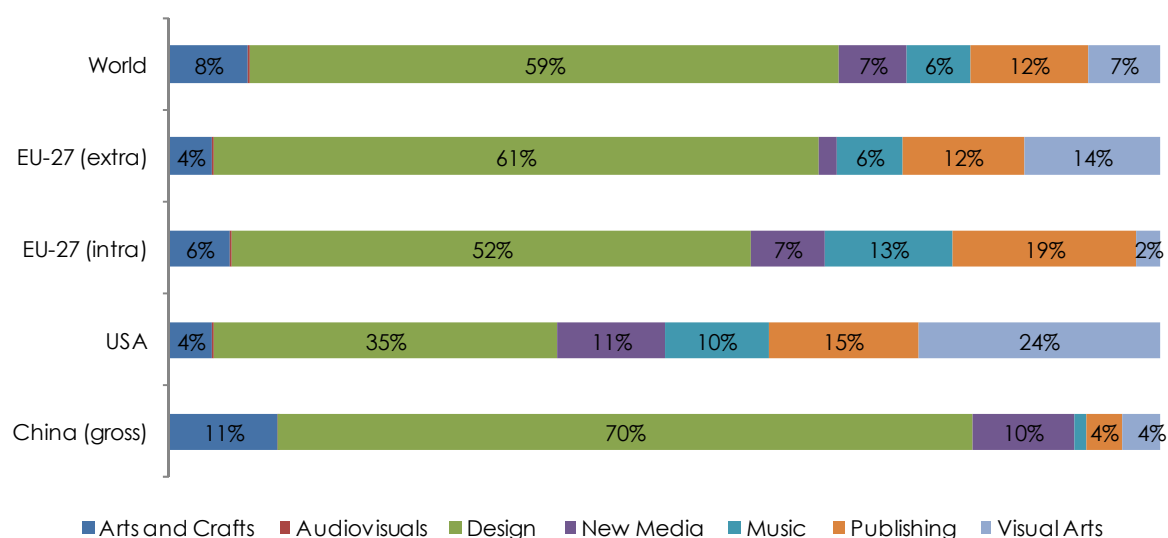
The REA index takes the form:

$$REA = \ln\left(\frac{x_{ij} / \sum_j x_{ij}}{\sum_i x_{ij} / \sum_i \sum_j x_{ij}}\right)$$

Source: Balassa (1965).

In 2008, nearly 60 per cent of world exports in creative industries' goods were classified as design, followed by publishing with only 12 per cent (Figure 3.6). Design exports not only account for the vast majority of worldwide creative goods exports, but also developed quite dynamically, with average annual growth rates of 5.2 per cent between 2002 – 2008 (Table 3.8). The share of Audiovisuals in any of the above regions' exports of creative goods exports accounted for no more than 0.2 per cent in 2008, with low growth throughout the observed time span. Very modest export growth in new media goods (0.5 per cent) and publishing goods (0.7 per cent) point at the growing importance of digital distribution models for these types of goods.

Figure 3.6: Share of creative domains in exports of creative goods, 2008 by exporting region



Note: The share of Audiovisuals in any of the above regions' exports of creative industries exports accounts for no more than 0.2 per cent. The share of Chinese Music exports is 1.1 per cent.

Source: UNCTAD Global Databank on world trade in creative products - WIFO calculations.

Table 3.8: Average annual growth in exports of creative goods, 2002 – 2008
by domains

	World	EU-27 (extra)	EU-27 (intra)	USA	China (gross)
All creative industries goods	4.2	2.2	3.2	3.3	5.2
Arts and crafts	2.9	-1.9	0.0	-6.2	4.0
Audiovisuals	2.1	-5.8	3.0	-5.2	-6.9
Design	5.2	3.9	4.2	3.7	4.3
New Media	0.5	-12.2	-0.5	-3.6	15.4
Music	9.6	8.0	7.7	13.4	16.6
Publishing	0.7	0.7	1.2	-1.6	10.6
Visual Arts	3.7	-0.3	-0.6	11.2	-0.3

Source: UNCTAD Global Databank on world trade in creative products - WIFO calculations.

Apart from design, which dominated (61 per cent of extra-EU creative goods exports), visual arts (14 per cent) and publishing (12) carried considerable weight in EU exports of creative goods. The weight of Audio Visuals and New Media was not only very small (0.1 and 2 per cent in 2008); in addition, these sectors featured sharp export declines between 2002 and 2008. The fastest growing creative industries' goods exports in 2002-2008 was the music sector (8 per cent growth p.a.). Creative exports to EU partners generally developed more dynamic as opposed to extra-EU exports. Figure A.3 in the Appendix provides a detailed look into the status and development of relative competitive advantage of individual creative goods items vis-à-vis total extra EU-27 trade in total creative goods.

With a share of 70 per cent, design goods dominate Chinese exports even more than they do globally, while publishing goods make up only 4 per cent of China's creative goods exports. With a relative export share of 11 per cent, arts and crafts products account for a non-negligible share of China's total creative goods exports. In fact China is the leading exporter of arts and crafts products worldwide (UNCTAD, 2008). These findings are quite intuitive and emphasize the role of common languages and cultural norms for international trade in creative products. For instance, prevailing cultural and linguistic differences between China and the Western hemisphere make it hard for the Chinese publishing and music industries to compete in world trade. On the other hand, export growth in these sectors is impressive. China also significantly outpaces other regions in terms of new media export growth.

The US was specialised in visual arts and publishing in 2008, which came in at 24 per cent and 15 per cent respectively; it held a comparatively large share in new media (11 per cent), but a distinctly lower relative share in design (35 per cent). The music sector saw the largest increase in the volume of creative goods exports between 2002-2008.

3.3.2 Trade in creative services

Owing to the unavailability of coherent and complete data on trade in services, this section mostly presents evidence from quite aggregate SBS data. We did do some more detailed analyses based on the UNCTAD global databank on world trade in creative products. Due to data constraints the resulting evidence is limited to only 13 EU countries, however.

Between 2002–2008, this group of countries nearly doubled its aggregate exports of Creative services from initially €27.8 billion in 2002 to €52.7 billion in 2008. This corresponds to an average annual growth rate of 11.2 per cent (Table 3.9). With +4 per cent p.a. the value of creative service imports developed less dynamically. In absolute terms the value of creative services was €37.4 in 2002 and €47.4 in 2008. Evidence derived from this limited group of countries strongly suggests that the great dynamics in trade of creative services more than counterbalanced the sluggish trend in trade of creative goods. For the given time span, the

study sample managed to improve its trade balance of creative services to a considerable degree and qualified as a net exporter of such services in 2008.

The group of 13 EU countries advanced its international competitiveness in architectural, engineering and other technical services. This finding is quite relevant in economic terms since these services at the same time form the top service category of the sample under review. As of 2008 its share came up to 40 per cent of total creative service exports. With a share of 28 per cent research and development services rank second, but the classification of R&D as a creative service does not seem compulsive.

Table 3.9: Key figures on trade in creative services in 13 EU countries, 2002-2008

	Export of CI services		Import of CI services	
	Share in total CI services (2008), in per cent	Av. An. Growth 02-08, in per cent	Share in total CI services (2008), in per cent	Av. An. Growth 02-08, in per cent
Advertising, market research and public opinion polling	23	9.4	27	5.3
Research and development	28	9.0	27	6.2
Architectural, engineering and other technical services	40	16.7	30	2.4
Personal, cultural, and recreational services	9	4.6	16	2.0
Total CI services	100	11.2	100	4.0

Note: The 13 EU countries include Belgium, Cyprus, the Czech Republic, Germany, Italy, Latvia, Poland, Portugal, Romania, Slovakia, Slovenia, Spain and Sweden.

Source: UNCTAD Global Databank on world trade in creative products - WIFO calculations.

Since the internal market is an opportunity to boost intra-regional trade in creative industries' services, it is important to evaluate the current cross-border trade performance and the potential barriers. Another indicator of service trade is the percentage of firms carrying out cross-border trade. In the selected western EU countries, the percentage of firms ranges between 8.9 per cent in architecture and 23.1 per cent in software consultancy (Table 3.10). The corresponding share for advertising is 16.3 per cent. The sample of eastern EU countries shows similar shares except for software consultancy and supply.

Table 3.10: Share of enterprises carrying out cross border trade, 2004

Industry	EU-West	EU-East
Software consultancy and supply	23.1	17.4
Architectural & engineering activities	8.9	8.7
Advertising	16.3	15.2
All NACE branches – Total	13.0	12.4

Note: EU-West includes Spain, Sweden, Denmark, Italy, Ireland, Luxembourg and Portugal. EU-East includes Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Cyprus, Malta, Romania, Slovenia and Slovakia.

Source: Eurostat SBS- WIFO calculations.

Given the low share of exporters among service firms it is worth investigating their main barriers to export, such as taxation issues, language and cultural barriers etc.. Table 3.11 provides an overview of a number of potential barriers to service exports and reports their degree of importance: somewhat, fairly, very and not important. The survey sample covers business service firms regardless of whether they are actually engaged in international trade or not. The greatest barriers are said to be 'difficulties in identifying potential clients abroad', 'lack of international standards for services' and 'language and cultural barriers', while 'insurance, guarantee systems, etc. issues' and 'taxation issues' are less important.

Table 3.11: Barriers to international trade in services
in per cent

Industry	Very true/ important	Fairly true/ important	Somewhat true/important	Not true/ important	Unknown / not applic.
<i>Cross border trade not relevant (products not exportable)</i>					
Software consultancy and supply	15	8	7	30	39
Architectural & engineering activities	18	6	6	21	49
Advertising	18	12	10	19	41
All NACE branches – Total	19	7	6	21	46
<i>Difficulties in identifying potential clients abroad</i>					
Software consultancy and supply	12	16	14	16	42
Architectural & engineering activities	17	9	7	10	56
Advertising	12	15	11	16	46
All NACE branches – Total	14	10	8	14	54
<i>Establishing a commercial presence abroad</i>					
Software consultancy and supply	17	15	10	19	40
Architectural & engineering activities	18	10	5	12	55
Advertising	14	11	12	19	44
All NACE branches – Total	16	9	6	16	53
<i>Insurance, guarantee systems, etc. issues</i>					
Software consultancy and supply	9	11	12	21	46
Architectural & engineering activities	11	8	8	11	62
Advertising	8	6	14	19	52
All NACE branches – Total	9	7	8	17	58
<i>Lack of international standards for services</i>					
Software consultancy and supply	18	16	12	15	39
Architectural & engineering activities	14	10	8	9	58
Advertising	8	13	13	17	50
All NACE branches – Total	15	9	7	15	54
<i>Language and cultural barriers</i>					
Software consultancy and supply	13	16	14	18	40
Architectural & engineering activities	10	13	10	12	55
Advertising	17	9	14	18	43
All NACE branches – Total	12	10	10	16	51
<i>Movement of personnel on a temporary basis</i>					
Software consultancy and supply	14	9	10	23	43
Architectural & engineering activities	15	9	7	15	55
Advertising	14	8	9	24	45
All NACE branches – Total	13	7	7	19	54
<i>Taxation issues</i>					
Software consultancy and supply	12	8	11	23	46
Architectural & engineering activities	9	7	10	12	62
Advertising	11	9	12	20	48
All NACE branches – Total	10	7	8	18	57
<i>Other barriers</i>					
Software consultancy and supply	8	1	1	16	73
Architectural & engineering activities	8	1	1	14	75
Advertising	10	1	4	16	69
All NACE branches – Total	7	1	2	15	75

Source: Eurostat SBS- WIFO calculations.

3.4 Market Characteristics

3.4.1 Industry characteristics

Creative industries are dominated by a large number of micro firms (with nine or fewer employees, including one-person firms). On the other hand, there are a handful of very large firms that contribute to the lion's share of employment. This size distribution is referred to as the 'missing-middle phenomenon' (Kooyman, 2010).

Based on SBS data for the EU-22, Table 3.12 presents the size distribution of CI firms, as well as the distribution of employment over four different firm size classes: (i) no employees, (ii) 1 to 4 employees, (iii) 5 to 9 employees and (iv) 10 and more employees. Note that the unit of analysis is the smallest group of legal units meaning that the self-employed are included. With a share of 58 per the majority of CI firms consist of these one-person firms. Unreported evidence shows that the share of one-person firms is particularly high in the culture and recreation sector (63 per cent) and in advertising (67 per cent). In total, the self-employment rate in the creative industries is about 13 per cent – much higher than the aggregate self-employment rate (excluding agricultural employment).

95 per cent of the 1.2 million firms in the core creative industries employ less than 10 people. This share is much higher than that of manufacturing industries (with a share of 80 per cent). However, the share of micro firms is similar to that of all business services except advertising, which exhibits a still higher share of these small enterprises.

Despite the extraordinarily high share of micro firms, the majority of workers (65 per cent) are employed in firms with ten or more employees. These make up only five per cent of the CI firm population.

Table 3.12: Size distribution of employment and firms in EU-22 creative industries, 2007

Firm size (=persons employed)	Size distribution of firms		Size distribution of employment	
	No. of firms	percentage	No. of persons employed	percentage
Zero	669,170	58	658,921	13
Between 1 and 4	376,537	32	752,344	15
Between 5 and 9	56,479	5	386,023	8
10 or more	58,961	5	3,267,222	65
Total	1,161,148	100	5,064,510	100

Note: The classification of the creative industries is based on NACE Rev. 1.1 (see table 2.1), but excludes photographic activities, designer fashion activities, and Art & Antiques. Due to data limitations, the following countries are excluded: Belgium, Greece, Ireland, Malta and Poland.

Source: Structural Business Statistics (SBS), refer also to the Technical Appendix – WIFO calculations.

3.4.2 Labour market characteristics

Labour costs make for a high share of creative industries' value added, indicating that production is both labour- and human-capital-intensive. The creative industries also differ with respect to their average labour productivity and part-time ratio as compared to all business services. In particular, the software consultancy and supply industries show the highest level of labour productivity of all business services considered.

Table 3.13 reports on the EU-15 labour-market characteristics of creative workers, defined by creative occupations. These characteristics include percentages of creative workers with tertiary education, self-employed individuals, creative workers with temporary contracts, part-time workers, creative workers in micro firms, and multiple job holders.

Table 3.13: Labour market characteristics of creative occupations in EU-15, 2008

Occupation		Percentage of workers which have/are...					
ISCO 88	Description	Tertiary educ. ^(a)	Self employed	Tempo-rary contr.	Part-time	Working in micro firms ^(b)	Multiple jobs
211	Physicists, chemists and related prof. Mathematicians, statisticians and related professionals	87	7	13	7	11	3
212	Computing professionals	81	11	15	7	11	6
213	Architects, engineers & related professionals	70	10	8	7	9	3
214	Life science professionals	85	19	7	7	12	3
221	health professionals	91	10	14	10	15	4
222	Archivists, librarians & relat. information prof.	95	40	14	14	26	8
243	Social science & related professionals	78	3	12	31	22	6
244	Writers and creative or performing artists	86	16	15	30	14	8
245	Artistic, entertainment & sports associate prof. & fashion	65	44	13	26	14	10
347		42	38	14	30	24	9
Total creative occupations		78	24	11	16	16	6
Non creative occupations		24	15	12	21	26	4

Note: All numbers are weighted in order to reflect total population; a) level 5 and 6 of the International Standard Classification of Education (ISCED); b) Micro-firms are defined as firms with 10 or fewer persons employed. Note that this definition slightly deviates from the boundaries that apply to SBS data (viz. 9 or fewer persons employed). The differences in methodology are due to specificities of the datasets.

Source: EU Labour Force Survey 2008 – WIFO calculations.

The different creative occupations share a number of common characteristics. First, for creative occupations in the EU-15, the proportion of employees with tertiary education is 78 per cent against 24 per cent for workers in non-creative occupations. The proportion of employees with tertiary education ranges from 42 per cent for artistic, entertainment, and sports associate professionals to 65 per cent for writers and creative/performing artists, and over 80 per cent for physical, mathematical, and engineering science professionals. Another common characteristic of creative occupations is a higher self-employment rate. In the EU-15, the self-employment rate is nine percentage points higher for workers in creative occupations than for those in non-creative occupations. Artists and writers tend to work fewer hours, as indicated by their part-time ratio. Furthermore, 6 per cent of creative professionals hold multiple jobs, compared to 4 per cent for those in non-creative occupations. Among writers and performing artists nearly one in 10 persons is a multiple job holder. Overall one can conclude that non-standard forms of employment such as self-employment, part-time employment, and employment in multiple jobs are more prevalent among creative occupations than among non-creative occupations. However, the creative occupations are highly heterogeneous themselves, with wide variations between physical, mathematical, and engineering science professionals on the one hand and writers and creative/performing artists on the other.

3.4.3 Creative clustering

A major characteristic of creative industry firms is their geographic clustering. Firms that produce creative goods and services locate in close proximity to one another and they are highly concentrated in metropolitan and urban areas. Calculations at the NUTS 2 level for several EU countries reveal that the regional difference in the share of creative industries within countries is larger than across EU countries, as indicated by the coefficient of variation. The same holds when the share of creative occupations is used to calculate the coefficient of variation across regions and industries.

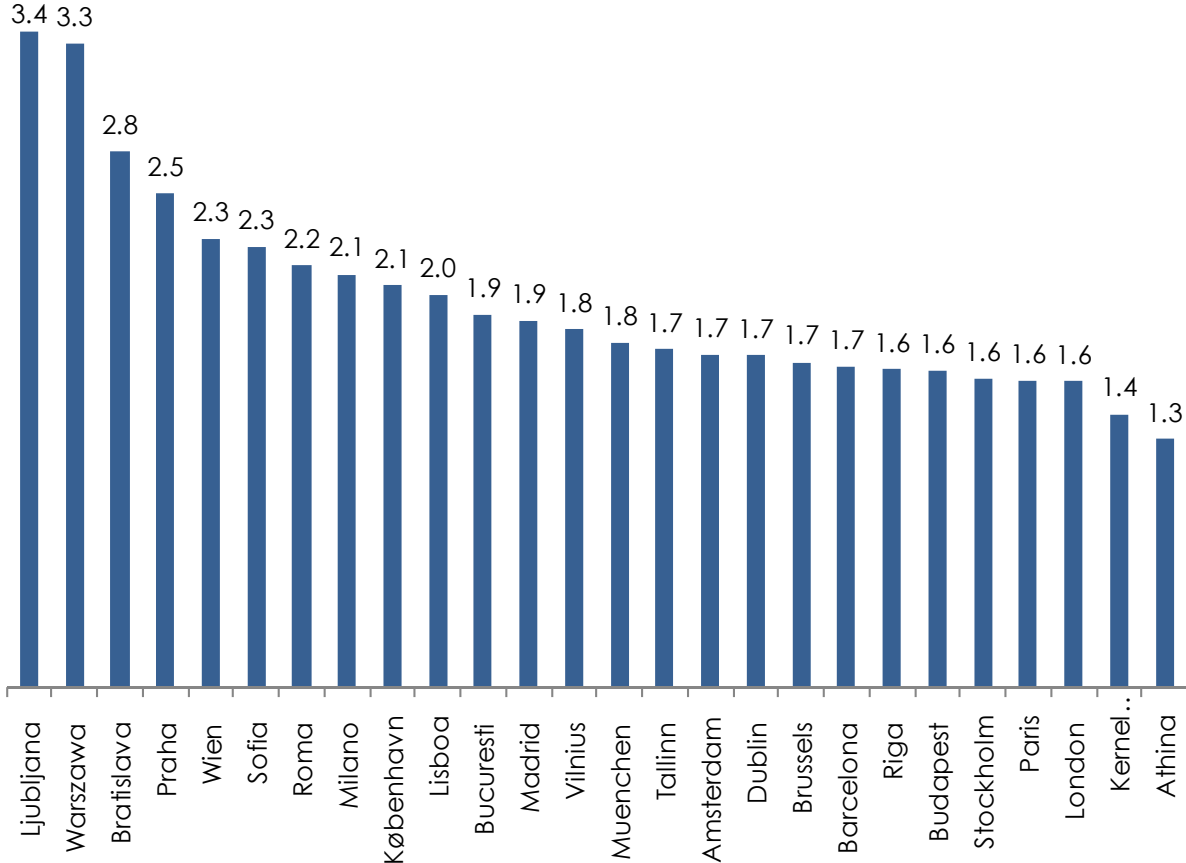
A somewhat more sophisticated approach to creative clustering and agglomeration takes a look at location quotients (LQ), calculated as:

$$LQ = \frac{\sum_{k=i}^n Y_i}{\sum_{k=i}^n X_i} / \frac{Y}{X}$$

where Y_i and X_i denote creative industries (creative occupations alternatively) and total employment in a given urban area i and Y and X are the corresponding national values. The location quotient indicates whether and to what extent the share of creative industries (creative occupations alternatively) in a given region exceeds the national average. A location quotient of 1 indicates that the employment share in the given urban area is identical to that in the national economy. A quotient greater (smaller) than one means that a particular industry is more (less) prevalent in a given area than in the national economy.

The location quotients displayed in Figure 3.7 show that cities feature far higher concentrations of creative industry activity than does the national economy. In particular, Ljubljana, Warsaw, Bratislava, Prague, Vienna, Sofia, Rome, Milano, Copenhagen and Lisbon all have a location quotient of 2.0 or higher. Unreported results show that the location quotient does not vary much when the spatial unit is defined as the core city or the metropolitan unit except for London and Paris with much higher location quotients for the core cities.

Figure 3.7: Location quotient of the CIs in capital cities and semi-capital cities, 2006

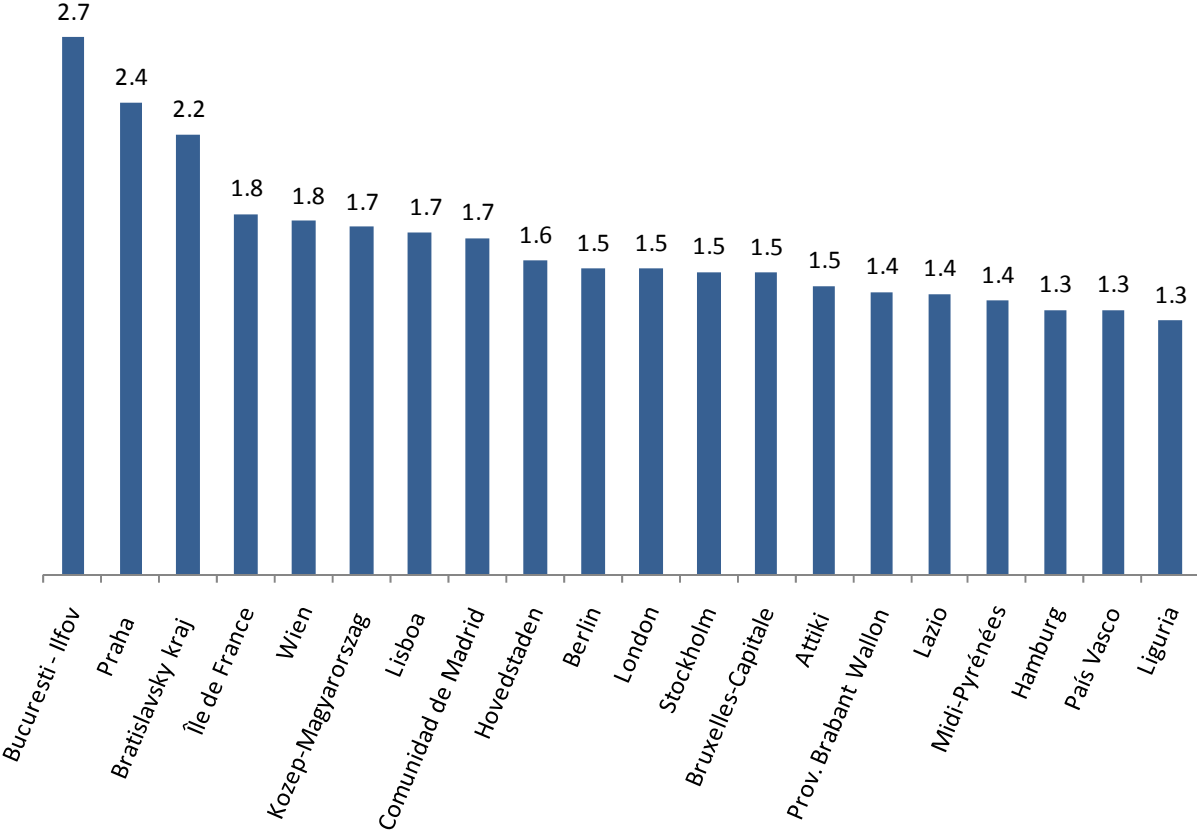


Note: The data refer to the LQ based on (weighted) employment in the creative industries as percentage of total employment of the enterprise sector. The definition of the creative industries follows Table 2.1. Refer also to the Technical Appendix. A location quotient greater than 1 points at higher than average national concentration of CIs in a given area.

Source: AMADEUS database - WIFO calculations.

A similar picture emerges when the location quotient is based on the occupational measure. Figure 3.8 shows the location quotient based on creative occupations at the NUTS 1 and 2 levels for the 17 EU countries for which data is available.

Figure 3.8: Location quotient of creative occupations, 2008



Note: Location quotients are calculated at the NUTS 1 or 2 levels for the following countries: AT, BE, CZ, DK, ES, ES, FI, FR, GR, HU, IE, IT, PT, RO, SE, SK and UK. See Table 2.3 for the definition of creative occupations. All numbers are weighted to reflect national population weights.

Source: EU Labour Force Survey 2008 – WIFO calculations.

The findings show that 17 out of 20 regions with the highest share of creative occupations are capital regions or semi capital regions. Again, Bucharest, Bratislava and Prague have especially high location quotients for creative occupations of 2.0 or more.

The finding that creative industries and creative workers are concentrated in urban areas is consistent with the related literature. A recent study conducted for the European Cluster Observatory also shows a high degree of urban clustering (Power and Nielsén, 2010). In particular, the authors find that large urban areas and capital city regions dominate the creative and cultural industries. Furthermore, empirical evidence for North America and the EU suggests that the urban concentration is uneven across the different creative sub-industries and among the different creative occupations. For Sweden, Hanson (2007) finds a higher degree of spatial concentration of ‘bohemians’ (artists, writers, etc.) as compared to all creative workers. For the EU countries, Power and Nielsén (2010) find that sub-industries with the highest urban concentration include (i) reproduction of computer media, sound recording and video recording, (ii) publishing of software and sound recordings, (iii) motion picture and video production and distribution and (iv) news agency activities. Similarly, evidence at the regional level for the UK shows that the highest urban concentration can be

found for video, film, and photography; music, visual, and performing art; and radio and TV, with location quotients for London of about 2.7, 2.4, and 3.1, respectively (De Propriis et al., 2009). London also shows the highest urban concentration of advertising, designer fashion, and publishing as compared to the creative industries at large. The remaining creative industries are more evenly distributed across the British regions.

Using metropolitan data for the US for the year 2001, Schoales (2006) finds that independent artists, writers, and performers, and jobs in motion picture and video production, distribution, and postproduction show the highest level of spatial concentration of all industrial activities and services except for hotel casinos. The author suggests that these industries are very cluster-dependent because of an inherently rapid pace of product innovation.

Table 3.14 presents detailed evidence on the degree of spatial specialisation for selected creative occupations based on the EU Labour Force Survey 2008. In the EU-14 (EU-15 excluding Ireland) the difference in location quotients between rural and urban areas is largest for mathematical and statistical professionals, writers, creative/performing artists, and computing professionals. For artistic, entertainment, and sport occupations the rural-urban gap is close to that of all creative occupations.

Table 3.14: Location quotient of core creative occupations in urban, rural and intermediate populated areas, 2008

Occupation		EU-14			EU-7		
		densely pop-ulated area ^{a)}	Inter-mediate area ^{b)}	thinly pop-ulated area ^{c)}	densely pop-ulated area ^{a)}	Inter-mediate area ^{b)}	Thinly pop-ulated area ^{c)}
ISCO 88	Description						
	Total creative occupations	1.25	0.81	0.59	1.53	0.98	0.53
211	Physicists, chemists and rel. professionals	1.27	0.82	0.52	1.49	1.03	0.55
212	Mathematicians, statisticians and rel. prof.	1.57	0.46	0.23	2.09	0.63	0.20
213	Computing professionals	1.30	0.78	0.47	1.71	0.91	0.40
214	Architects, engineers & rel. professionals	1.20	0.91	0.57	1.51	1.01	0.55
221	Life science professionals	1.11	0.80	1.01	1.16	1.15	0.79
222	health professionals	1.25	0.79	0.63	1.31	1.17	0.65
243	Archivists, librarians & rel. information prof.	1.27	0.61	0.84	1.46	1.16	0.52
244	Social science & related professionals	1.23	0.82	0.64	1.52	1.00	0.54
245	Writers and creative or performing artists	1.36	0.65	0.53	1.86	0.72	0.36
347	Artistic, entertain. & sports associate prof.	1.28	0.73	0.63	1.53	0.75	0.64
521	Fashion and other models ^{a)}	1.18	0.58	1.18	1.16	2.28	0.30
	Share of creative occupations	9.6	6.2	4.5	7.2	4.6	2.5

Note: EU-14 refers to EU-15 countries excluding Belgium. EU-7 refers CY, CZ, EE, HU, LT, LV and SK. All numbers are weighted to reflect national population weights. ^{a)} Densely populated areas are defined as areas with more than 500 inhabitants per square kilometer and a total population of at least 50,000 inhabitants. ^{b)} Intermediate areas have a density superior to 100 inhabitants per square kilometer and either a population of at least 50,000 inhabitants, or alternatively, the area is adjacent to a densely-populated area. ^{c)} If neither of the definitions for densely populated or intermediate areas proves true, then the said area is said to be thinly-populated.

Source: EU Labour Force Survey 2008 – WIFO calculations.

Based on Dutch urban areas and very long time series, Deinema and Kloosterman (2009) find that the arts show the highest degree of spatial concentration, followed by publishing as compared to advertising, architecture, and broadcasting. These authors show that the magnitude of spatial concentration not only lasts for a long time, but it also seems to be reinforced over a long period of time. In other words, some creative industries display a very high degree of path dependence. Calculations based on EU data also show that the spatial pattern in the location of creative industries is highly persistent over time.

There are several reasons why creative industries are spatially localised in urban areas. Lorenzen and Frederiksen (2008) and Malmberg and Maskell (2002) suggest the following main rationales for creative clustering: (i) importance of specific local labour markets and

tacit knowledge, (ii) spillovers from one specific creative industry to another, (iii) firms' access to dedicated infrastructure and collective resources, (iv) project-based work, (v) synergistic benefits of collective learning, and (vi) development of associated services, infrastructure, and supportive government policies.

Local labour markets seem to be particularly relevant for the creative industries. Creative industry firms locate near one another in order to take advantage of a common pool of labour, knowledge, and ideas. In this context Lorenzen and Frederiksen (2008) point at the high degree of mobility and labour flows between different creative industry firms. In addition, there is a significant number of multiple job holders (e.g. a film director involved in advertisement production). Localisation helps to decrease transaction costs due to the temporary and flexible nature of projects. The second point concerns knowledge spillovers. Typically, agglomeration economies related to knowledge spillovers are more pronounced in skill-intensive industries, as is the case for creative industries. The size, density, and compactness of urban centres foster interpersonal interaction, creating greater opportunities for enhanced information flows. As a result, cities have historically been the places where much innovation has occurred (Bettencourt et al., 2007). Another reason is firms' access to infrastructure – such as music schools and opera houses – and collective resources (universities, for example). Furthermore, clustering in the creative industries is also related to the fact that the work is often project-based with many face-to-face contacts due to high levels of uncertainty, instability, and project complexity, as well as short product cycles (Lorenzen and Frederiksen, 2008).

Evidence on interrelations between different subsets of the creative industries can be obtained by investigating co-location patterns. Advertising businesses tend to favour highly centralised city-centre agglomerations in order to be close to national newspapers and television stations (Grabher, 2002). The media industry itself often manifests as a specialised form of cluster designed to produce media content, such as motion pictures, television programs/videos, broadcasts, audio recordings, books, newspapers, magazines, games, photography and designs, websites, and mobile content (Picard, 2009). Wu (2005) suggests that multimedia firms (i.e. firms that provide internet content) appear to settle in places where the traditional media sector (e.g. the film and music industry, entertainment) and the software industry are already in place.

Picard (2009) shows that there are also significant relations between the media industry and music and theatrical performance and festivals, sport and entertainment activities, information and communication technologies (computers, software, telecommunications), and hardware manufacturers (television and radio receivers, set-top boxes, game consoles, DVD players, etc.).

Currid and Williams (2010) find that several cultural subsectors show strong co-location patterns. Using highly disaggregated data for Los Angeles and New York, the authors find correlation coefficients across districts of 0.75 and higher for (i) performing arts and music, (ii) music and film, (iii) art and design, and (iv) art and film. The co-location patterns are explained by cultural infrastructure.

Not only are creative industries as a whole heavily concentrated in urban areas, but the degree of urban concentration also varies between subsectors. A very high degree of spatial concentration can be found in film, music, and other arts. The tendency of the music industry to agglomerate in urban areas can be explained by the fact that the music industry is most often a highly localised cultural-product industry that draws on a local creative milieu and cultural forms (Power and Hallencreutz, 2002 and Hesmondhalgh, 1996). Another reason is

that the national subsidiaries of major international record companies are also located in major cities. Within such music clusters, new project partners (e.g. art direction, media, and event firms) can be easily found, which reduces transaction costs (Maskell and Lorenzen, 2004 and Step, 2003).

Given the high degree of urban concentration in creative industries, it is natural to ask to what extent this is linked to factors such as population size, GDP per capita, availability of human capital, etc. It is obvious that size matters. Large cities have a large number of consumers characterised by high disposable income for spending on luxury goods and a significant amount of leisure time. Therefore, the next step is to explore whether there is a statistical relationship between the spatial agglomeration of creative industries and the size of their population and wealth. The data on metropolitan population, GDP per capita in pps, and the tertiary education share are obtained from the urban audit statistics and refer to the years 2006 or the latest available year. The location quotient is calculated based on the AMADEUS database and refers to 2006.

OLS (ordinary least square) estimation results indicate that human capital and population size are the most important factors that affect the spatial concentration of creative industries among different urban areas in the EU (Table 3.15).

Table 3.15: OLS estimates of the determinants of location quotients of the creative industries^{a)}

	Specification 1			Specification 2		
	Coef.		t ^{b)}	Coef.		t ^{b)}
log population	0.26	**	2.34	0.29	***	3.14
log % of working age population with tertiary education	0.98	***	4.49	0.99	***	4.62
log GDP per capita in pps	0.28	*	1.93	0.28	*	1.93
capital city dummy	0.12		0.60			
Constant	-3.22	*	-1.91	-3.47	**	-2.30
R ²	0.26	**	2.34	0.29	***	3.14
# of obs	153			153		

Notes: The regression is based on urban data for EU countries. ^{a)} Dependent variable: logarithm of location quotient of the employment share of the creative industries. ^{b)} t-values are based on White's heteroskedastic consistent standard errors. Statistical significance at the 1 per cent (5 per cent, 10 per cent) level is indicated by three (two, one) stars.

Source: AMADEUS and urban audit database - WIFO calculations.

Statistical significance of the population regressor is related to the fact that many cities have too few inhabitants to constitute sufficient consumer demand for the specialised services that creative industries offer. However, an elasticity of the location quotient with respect to population size of 0.26 indicates that the degree of urban specialisation of the creative industries rises less than proportionally with an increase in population size. The elasticity for the tertiary graduate share indicates that the degree of urban specialisation of the creative industries rises about proportionally with the tertiary education share. However, it should be noted that in general, causality can go in two ways. For instance, the employment share of creative industries not only depends on a significant proportion of highly skilled labour; cities that offer a significant amount of creative and cultural products as compared to the national average also tend to attract more highly skilled workers. GDP per capita is only significant at the 10 per cent level. The location quotient of capital cities is not significantly higher than that of non-capital cities. Belonging to a capital city is not significantly related to the location quotient once cities' GDP per capita and human capital population size is controlled for. Other factors, such as past population growth and the share of foreign-born people, are not significant.

4. Growth effects and the wider role of the creative industries

4.1 Supply-chain linkages between creative industries and the rest of the economy

One way of investigating the wider effects of the creative industries on the economy is to look at the supply chain linkages between creative industries and the rest of the economy. Some limited evidence on the importance of business-to-business (B2B) transactions for the creative industries can be obtained from Eurostat structural business data for 12 EU countries in 2004. Table 4.1 shows that B2B transactions dominate in software architecture and advertising with a turnover share of more than 80 per cent in software and more than 90 per cent in advertising. Households account for only a small proportion of turnover of the creative industries; between 3 and 6 per cent depending on the sub-sector.

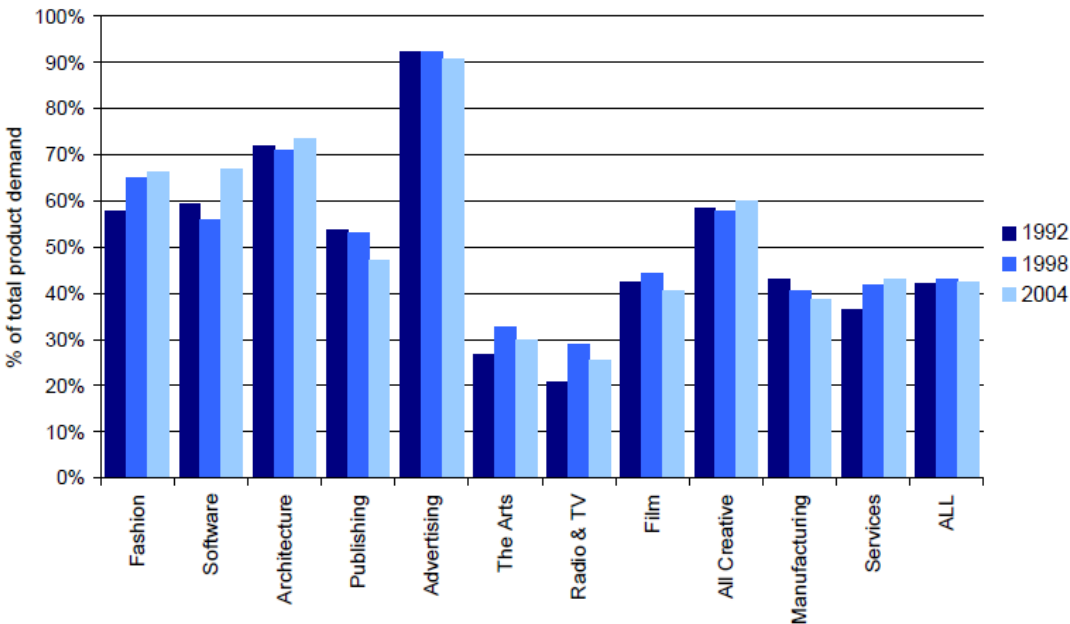
Table 4.1: Distribution of turnover on various types of clients, 2004

		Total enterprise sector	Public sector	Private Households
EU -West	Software consultancy & supply	86	14	1
	Architectural & engineering act	79	18	3
	Advertising	93	6	2
	NACE 72 & 74	84	12	4
EU-East	Software consultancy & supply	82	15	4
	Architectural & engineering act	83	10	6
	Advertising	92	2	6
	All NACE branches – Total	86	8	6

Notes: EU West includes: Denmark, Germany, Greece, Spain, Finland, Sweden and United Kingdom. EU East includes: Latvia, Lithuania, Romania, Slovenia and Slovakia. ; Source: Structural Business Statistics - WIFO calculations.

For most EU countries official input-output tables are available at the two-digit level only which severely limits the scope of supply-chain analyses. Notable exceptions are the UK and Denmark. The official UK supply and use tables show that around 60 per cent of creative products supplied to the UK economy are used as intermediate inputs for other industries (including other creative industries (Experian, 2007)). B2B demand is particularly important for advertising, architecture, software and fashion products (Figure 4.1). For the latter two industries we observe notable growth over time.

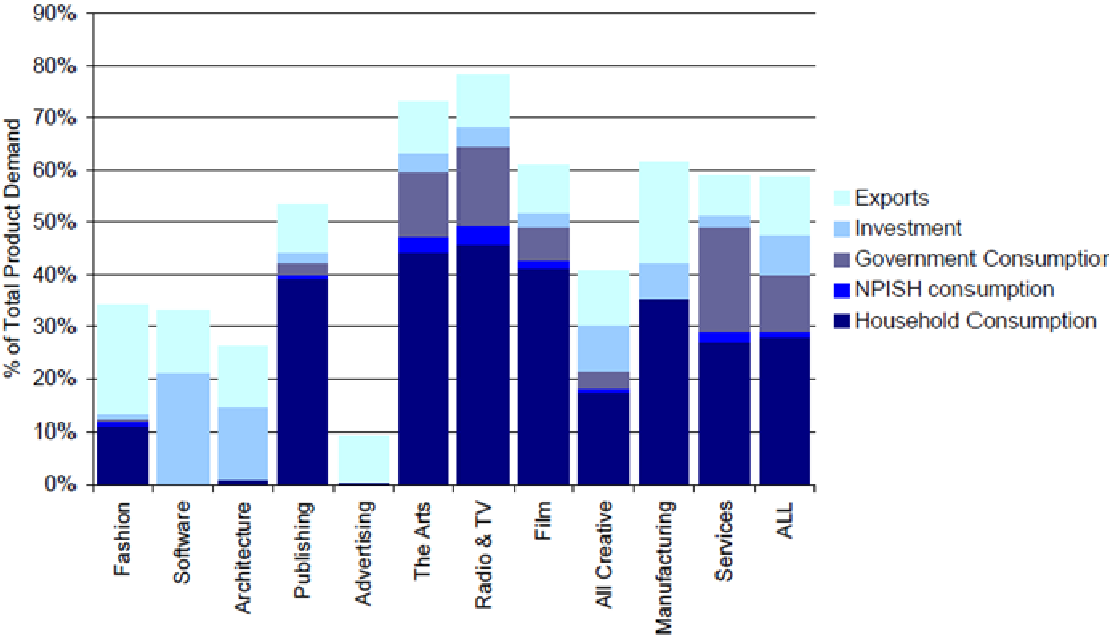
Figure 4.1: Intermediate inputs in total UK demand for UK creative products, 1992-2004



Source: ONS UK Input-Output Supply and Use Tables, used in Experian (2007).

Architecture and software products also stimulate investment – adding to the future productive capacity of the UK economy (Figure 4.2). Other creative products – the arts, radio & TV and film – are primarily consumption goods. All of the UK's creative products receive significant, and increasing, demand from exports.

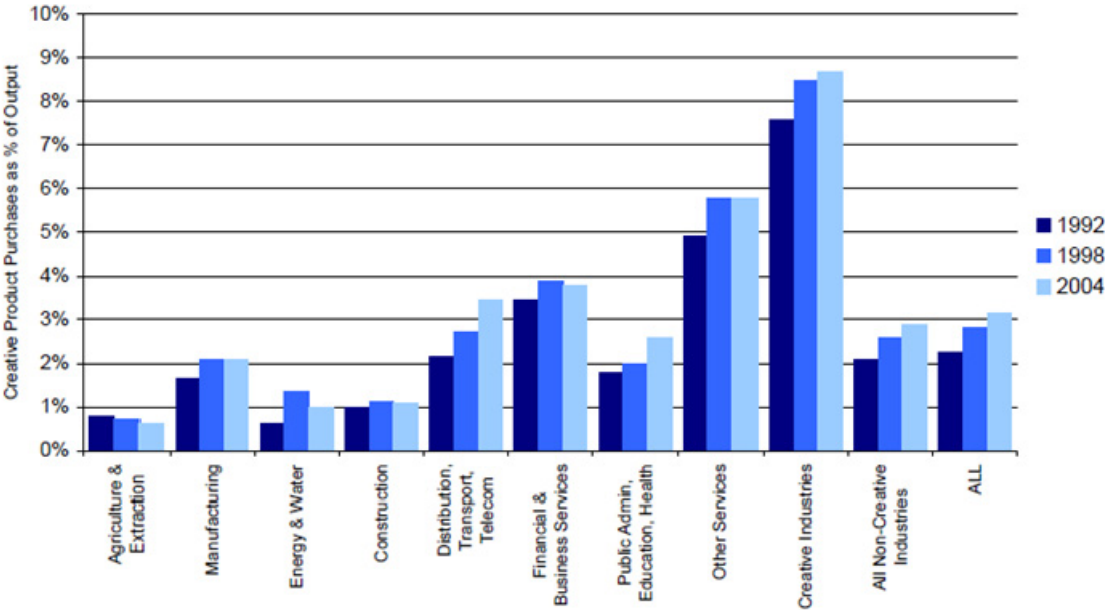
Figure 4.2: Final demand for UK creative products, 2004



Source: ONS UK Input-Output Supply and Use Tables, used in Experian (2007).

Industry purchases of creative products accounted for around 6 per cent of overall intermediate purchases by UK industries in 2004 and were equivalent to around 3 per cent of total gross industry output (Figure 4.3).

Figure 4.3: UK Industry purchases of UK creative products, 1992–2004



Source: ONS UK Input-Output Supply and Use Tables, used in Experian (2007).

These ‘forward’ supply chain linkages from the UK's creative industries appear to be stronger for certain services sectors than they are for manufacturing. Purchases of creative products

were particularly important among the creative industries themselves: creative product purchases made up over 8 per cent of total gross output and accounted for 19 per cent of intermediate purchases by the creative industries.

Table 4.2 shows the 20 largest industry users of creative inputs among 121 Danish industries at the three-digit level. Again, the creative industries themselves are the most reliant on creative inputs, with a creative intermediate input share of 37 per cent. The real estate sector acquires 22 per cent of its input from the creative industries (mainly inputs from publishing and software consultancy and supply). Among the manufacturing industries, manufacturers of tobacco and beverages have the highest share of creative intermediate input due to their extensive use of advertising services. The education sector also has one of highest usage rates of creative input (over 10 per cent), which is due its close integration with the audiovisual sector. In addition, wholesale and retail trade have a higher than average rate of usage of creative inputs. Unreported results show that advertising and software consulting have supply-chain linkages with all of the 116 non-creative industries.

Table 4.2: Twenty largest users of creative inputs in Danish industries, 2005
in per cent

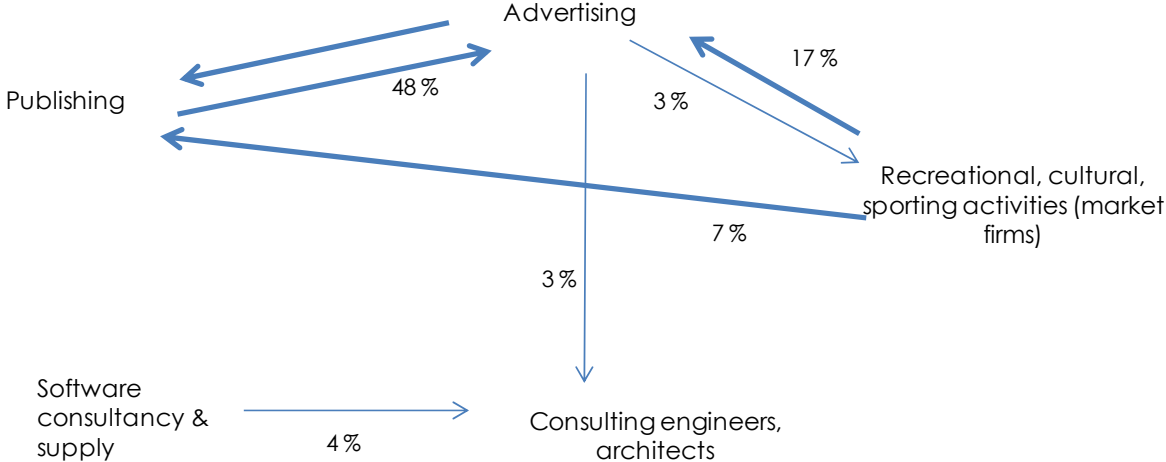
Using sector	Intermediate inputs from...					total creative intermediate input
	Publishing	Software consultancy & supply	Consult., engineers, architects	Advertising	Recreational, cultural, sporting activities (market)	
Creative industries	14.9	5.8	0.5	2.3	13.6	37
Real estate agents etc.	9.2	8	0.9	3.7	0.4	22
Adult and other education (market)	0.6	10.1	1	9	0.7	21
Manufacture of tobacco products	1.3	1.8	1.2	11.2	1.5	17
Social institutions etc. for children	0.6	2.1	0.2	0	12.7	16
Primary education	1.2	2.3	0.1	0	10.4	14
Mfr. of office machinery and computers	0.3	11.3	0	2.2	0.1	14
Mfr. of toys, gold and silver articles etc.	0.4	1.1	0.4	10.4	1.4	14
Computer activities exc. software consultancy & supply	0.6	6.8	1.8	1.9	2	13
Manufacture of beverages	0.2	1	0.3	9.2	1.2	12
Higher education	0.3	5.3	1.3	0.3	4.5	12
Research and development (other non-market)	1.3	2.2	0.1	0.3	7.2	11
Refuse dumps and refuse disposal plants	0.5	3.8	3.6	2.5	0.3	11
Department stores	0.8	0.8	0.5	6.2	2	10
Other service activities	0.7	5	0.2	3.9	0.4	10
Activities auxiliary to finance	0.6	6.4	0.1	2.9	0.1	10
Mfr. of paints, varnishes & similar coatings, printing ink & mastics	0.9	0.6	0.6	6.9	0.7	10
Activities of membership organizations	0.6	2.9	0.6	1.4	4.1	10
Regulation of and contribution to more efficient operation of business	0.9	4.6	1.3	0.3	2.5	10
Wholesale except of motor vehicles	0.7	1	0.6	5.5	1.3	9

Source: Danish Input-output supply and use table 2005 – WIFO calculations.

Figure 4.4 provides more detailed insight into Danish supply and use tables by exploring supply-chain linkages among different creative industries. For instance, for advertising the share of intermediate inputs supplied by publishing is 48 per cent. The second most important supplier of advertising are recreational and cultural industries belonging to the market sector (i.e. excluding non-market firms such as museums, libraries etc.). They contribute 17 per cent of all domestic inputs in advertising. This is clearly related to its close integration of advertising and the audiovisual sector. However, there are surprisingly few linkages between software

consultancy and supply on the one hand and the remaining creative industries on the other hand.

Figure 4.4: Supply linkages between different creative industries



Notes: The numbers represent the share of intermediate production in total production. Source: WIFO illustration based on Danish Input-output table by price unit, supply, use, supplying industries.

Box 4.1: Creative Tourism

The link between cultural industries and tourism is one of the most visible examples of the links of the creative industries to other sectors of the regional economy. Many urban areas have seen cultural tourism as a driver of local economic growth. In recent decades there has been a remarkable increase in the number of art festivals (Quinn, 2005). Cities have built festival marketplaces and performing arts centres in downtown areas (Rosentraub and Joo, 2009). A number of cities have established an event-led regeneration strategy by using festivals as part of their city marketing strategies (e. g. Richards and Wilson, 2004 for Rotterdam and Quinn, 2005 for Glasgow). In particular, music is increasingly becoming a major motivation for travel (Gibson and Connell, 2005). The opera festivals at Bayreuth were the first events that created music related travel (Gibson and Connell, 2005). Other popular music festivals in Europe include the Edinburgh International Festival, the Montreux Jazz Festival, the Festival d'Avignon, or the Roskilde Festival just to name a few. Often categories of music have been associated with particular places. Travelling to particular destinations because of cultural attractions is no longer restricted to urban areas, but also rural festivals focusing on food and wine, literature, film, and multiculturalism have recently gained attention (Gibson and Connell, 2005).

A number of studies show that cultural events have a positive impact of local economic growth (Palmer, 2010; Richards and Wilson, 2004). However, the effects are difficult to quantify since there are direct effects (direct event related spending), indirect effects (private spending) and induced effects on other industries through vertical linkages (Herrero et al., 2006).

Cultural tourism is growing with the changing travel trends and tourist demographics. In particular, cities are likely to benefit since there is a tendency towards shorter vacations, ageing of the industrialized countries, and the increase of more educated tourists (Boniface and Cooper, 2001 and Cabrini, 2003). However, the relationship between tourism and some other subsectors of the creative industries is less obvious. For instance, people's choices of places to visit will hardly be affected by the presence of software or advertising firms.

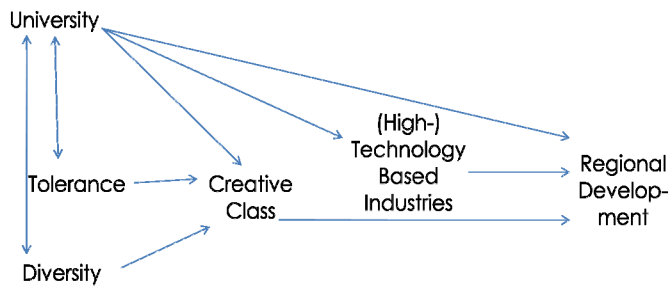
Furthermore, empirical evidence suggests that not only events, music, exhibitions and theatre are a magnet for tourism, but also popular motion pictures (i.e., television films, movies). Films can have a positive impact on tourism since they place recognition and may influence the choice of the next vacation destination (Riley et al., 1998). A number of empirical studies find that movies lead to more visits to the film location and places (e.g. Riley et al., 1998 and O'Connor, 2008).

Richards (2000) and Richards and Raymond (2000) first introduced the concept of 'creative tourism' as an extension to cultural tourism. Richards and Raymond (2000) define creative tourism as "tourism which offers visitors the opportunity to develop their creative potential through active participation in courses and learning experiences which are characteristic of the holiday destination where they are undertaken." The authors argue that creative consumers are increasingly looking for more interactive holiday experiences.

4.2 Relationship between the size of creative industries and regional growth

There is an ongoing debate about the effects of creative occupations and creative industries on regional growth in the EU and the US. Florida (2002, 2004) suggests that creative people are key drivers of urban and regional growth. This 'creative class' hypothesis received much attention among scholars, policy makers, urban planners, and civic leaders. In particular, the creative class hypothesis links urban growth to the knowledge economy. According to Mellander and Florida (2009) the creative workforce can have an indirect impact on regional growth through its positive impact on high-tech employment, innovation, and entrepreneurship. Figure 4.5 gives a schematic picture of this relationship.

Figure 4.5: Impact of creativity on regional growth



Source: Mellander and Florida (2009)

In recent years there have been numerous studies testing Florida's hypothesis using more rigorous econometric methods. So far, empirical evidence on the growth effects of the creative class hypothesis and/or the creative industries is mixed and controversial (Table 4.3). The results based on regional data for EU countries tend to be more optimistic about the growth effects of the creative industries (Piergiovanni et al., 2009 for Italy; Stam et al., 2008; Marlet and Van Workens, 2007; and Oort et al., 2009 for the Netherlands; Falck et al., 2009 and Möller and Tubadji, 2009, both based on German regional data; Boschma and Fritsch, 2009 for two EU countries; and Chantelot, 2008, based on French data). Although these studies show positive results, it is difficult to generalise from the findings, since they widely differ in scope: they are based on different sample periods and countries, different definitions of the creative occupations, and on different model specifications and estimation techniques.

Much of the controversy concerns how to define and measure the creative class. The major critical point is that the difference between educational attainment and the creative class is theoretically unclear since no high-skill occupations have been excluded from the creative class measure (refer to the discussion in section 2.3.2). From an empirical point of view, the high degree of multicollinearity makes it impossible to sort out the individual effects of the two explanatory variables.

Table 4.3: Overview of the performance effects of the creative industries and the creative class

	Country	Aggregation level	time period	# of units	Method	performance measure	creative class measure	Incl. of human capital	Empirical findings
Beckstead, Brown and Gellatly	US	Metropolitan Statistical Areas (MSA)	1980-2000	242	OLS (CS)	$\Delta \ln L$	Culture occupations	Yes	stock of human capital is the key factor of urban growth, not the specific presence of any one occupational group, such as cultural occupations
Boschma and Fritsch (2009)	8 EU countries	Regions	1996-2002	450	OLS (CS)	$\Delta \ln L$	Creat. class, Creat. core, Creative prof.	Yes	creative class: positively associated with regional economic growth
Chantelot (2008)	FR	Urban areas	1990-1999	354	Fixed effects Model (Panel data)	$\Delta \ln L$	creative class	Yes	both human capital and creative class positive and creative class significant
Cliffon (2008)	UK	Nomenclature of Territorial Units for Statistics (NUTS) level 3		171	bivariate corr., (CS)	$\Delta \ln L$	Creat. class, Creat. core, Creative prof.	No	positive and significant correlation
Eastwood (2009)	US	MSAs	2000-2004	272	OLS (CS)	$\Delta \ln L$	creative class index	No	positive and significant impact of creative class
Falck, Fritsch, Heblich (2007)	DE	Regions	1999-2004	403	OLS	regional GDP per capita growth	Bohemians	Yes	human capital positive and significant, Bohemians insignificant
Glaeser (2005)	US	MSAs	1990-2000	272	OLS	$\Delta \ln \text{pop}$	super creative class, Bohemians index	Yes	creative class becomes insignificant when human capital is included
Hoyman and Farcy (2009)	US	MSAs	1990-2004	276	OLS (CS)	$\Delta \ln L$	Creative class	Yes	creative class is not related to growth; human capital is a significant and good predictor
Marlet and Van Workens (2007)	NL	Core cities, largest cities	1994-2003	31, 50	WLS, IV (CS)	$\Delta \ln L$	core creative class	Yes	creative class significantly outperforms human capital
McGranahan and Wojan, (2007)	US	Counties	1990-2000	2145	OLS (CS)	$\Delta \ln L$	creative class	Yes	creative class and human capital are positive and significant; with the creative class variable performing better than human capital
Mellander and Florida (2007)	SE	Regions	2003	81		Wages per capita	Creat. class, Creat. core, Creative prof.	Yes	creative class measures outperform the educational attainment measure
Möller, Tubadji (2009)	DE	NUTS 3	1975-2004	323	GMM (panel data)	$\Delta \ln L$	core creative class	Yes	Creative class outperforms human capital

	Country	Aggregation level	time period	# of units	Method(s) (datatype in parentheses)	performance measure	creative class measure	Incl. of human capital	Empirical findings
Oort, Oud, Raspe (2009)	NL	Municipalities		496	Spatial lag/error model	$\Delta \ln L$	creative industries	Yes	Knowledge workers (of which creative industries are part of) are more important than innovation input in determining growth
Piergiovanni, Carree, Santarelli (2009)	IT	NUTS 3	2001-2006	103		$\ln VA$, $\Delta \ln L$	number of firms in the creative industries	No	Positive and significant effect on the change of the number of CI firms; initial level of CI share insignificant
Rausch and Negrey (2006)	US	MSAs	1993-2004	276	OLS (CS)	$\Delta \ln$ metro. GDP	creative class	Yes	Human capital and high tech are important drives of urban growth; creative class insignificant
Rushton (2006)	US	MSAs	1990-2004	59	OLS (CS)	$\Delta \ln$ GDP per capita	LQ of artists	No	Higher concentration of artists leads to an increase of growth in income per capita in cities, but to a decrease in metro areas
Stam, de Jong, and Marlet (2008)	NL	Cities	1994-2004	31	WLS estimation, (CS)	$\Delta \ln L$	creative class, creative industries	No	Both, creative class and creative industries are positive and significant; higher growth effect of creative class
Wedemeier	DE	Planning regions	1995-2004			$\Delta \ln$ GDP per capita	Creative prof., Bohemians	No	Creative professionals and bohemians foster growth.
Wojan, Lambert and McGranahan (2007)	US	Counties	1990-2000	3135	spatial error/lag model, (CS)	$\Delta \ln L$	creative class	Yes	Creative class outperforms human capital; Share of college graduates insignificant

Notes: a) Ordinary least squares (OLS), weighted least squares (WLS), instrumental variables (IV), General method of moments (GMM)

Source: WIFO compilation based on a review of the literature.

Given the high degree of correlation between human capital and the creative class, it is not surprising that only some studies come to the conclusion that the creative class measure explains growth better than human capital (Marlet and Van Workens, 2007 for the Dutch regions and Möller and Tubadji, 2009 for German regions). In a study of the 50 most important cities in the Netherlands, Marlet and Van Woerkens (2007) find that both the creative class and education are significant. More importantly, this study suggests that the professional categories of the creative class are better indicators for predicting economic growth than is human capital. In contrast, the Bohemian index seems to be no useful indicator for explaining the differences in economic performance among Dutch cities. In an influential study based on US metropolitan data, Glaeser (2005) finds that the creative class becomes an insignificant factor of urban growth once human capital is included in the regression equation. The more recent study of Hoyman and Faricy (2009) supports these findings for the US. Rausch and Negrey (2006) also find that the concentration of creative class workers is insignificant in explaining metropolitan output growth after controlling for educational attainment. There are some studies that do not even find a direct growth effect of creative occupations even when human capital is not controlled for (Beckstead et al., 2008; Donegan et al., 2008; Rausch and Negrey, 2006; and Beyers, 2010).

Overall the literature suggests that the creative class is an important, but not the dominant driver of metropolitan economic growth. Human capital and innovation are more important. An interesting result is obtained by Chantelot (2008) based on French urban data, namely that the growth effects of the creative occupations are higher in metropolitan areas than in medium-sized cities.

Few studies investigate whether creative occupations are a significant driver of growth not only in urban areas, but also in rural areas. An exception is the study by McGranahan and Wojan (2007), who find that both urban and rural areas with higher levels of creative occupations are associated with higher rates of total employment growth. This finding is rather important in light of policy initiatives that aim to capture the potential of CIs for Cohesion Policy (see section 6.3).

Table 4.4 provides own estimates of the relationship between the employment share of creative industries and the average annual change in GDP per capita in purchasing power parities (PPS) between 2002 and 2007. Alternatively, the real growth rate of regional GDP at market prices between 2002 and 2006 is used (lower panel in Table 4.4). The underlying data are measured at the NUTS 2 regional level and are drawn from the New Cronos regional database, combined with the employment share of the creative industries drawn from the AMADEUS database, also at the NUTS 2 level. All explanatory variables refer to the year 2002. Three specifications are tested. The first includes the initial log level of GDP per capita, the employment share of creative industries, and a dummy variable for capital city regions. Specification (ii) adds the investment ratio and specification (iii) includes the share of working age population with tertiary education as well.

The results show that the employment share of the creative industries in the initial year has a positive and highly significant impact on the average annual growth rate of regional GDP per capita in the next five years. This indicates that regions with a high employment share of creative industries grow faster than other regions (column i). The coefficient of 0.15 indicates that an increase in the employment share of the creative industries by one percentage point raises the average annual growth rate of regional GDP per capita by 0.15 percentage points. However, the three variables (i.e. initial GDP per capita, employment share of the creative industries and the dummy variable for capital cities) in the basic equation only explain a small

proportion of the variations in growth rates across European NUTS 2 regions, as indicated by the low R squared of 0.08.

Table 4.4: Impact of the CI employment share on regional GDP growth

Dep. Var.: average annual change in GDP per capita in pps between 2002-2007

	(i)		(ii)		(iii)	
	Coef.	t	Coef.	t	Coef.	T
log GDP per capita in pps, 2002	-0.012	** -2.56	-0.010	* -1.71	-0.010	** -2.04
Investment ratio, 2002			0.076	*** 3.14	0.078	*** 3.71
share of working age population with tertiary education, 2002					0.085	*** 4.50
employment share of the creative industries, 2002	0.154	*** 2.80	0.201	*** 3.12	0.111	* 1.68
dummy variable for capital city region	-0.006	-1.59	-0.011	*** -3.05	-0.014	*** -3.76
Constant	0.156	*** 3.24	0.111	** 1.98	0.103	** 2.14
# of obs	178		143		140	
R-squared	0.080		0.165		0.282	
Wald test on joint signif. of tertiary education share and share of CI employment, p-value					0.00	

Dep. Var.: Real growth rate of regional GDP at market prices 2002-2006

	Coef.	t	Coef.	t	Coef.	t
log GDP in million EUR current prices, 2002	-0.002	* -1.89	-0.002	-1.51	-0.001	-0.90
Investment ratio, 2002			0.047	*** 2.72	0.085	*** 4.56
share of working age population with tertiary education, 2002					0.103	*** 7.40
employment share of the creative industries, 2002	0.142	* 1.91	0.203	** 2.30	0.064	0.79
dummy variable for capital city region	0.000	-0.07	-0.002	-0.37	-0.006	-1.07
Constant	0.036	3.14	0.020	* 1.68	-0.010	-0.81
# of obs	117		117		111	
R-squared	0.065		0.120		0.421	
Wald test on joint signif. of tertiary education share and share of CI employment, p-value					0.00	

Note: The regression is based on NUTS 2 data for 10 EU countries: Austria, Belgium, Germany, Spain, Finland, France, Italy, the Netherlands, Sweden and the United Kingdom; Statistical significance at the 1 per cent (5 per cent, 10 per cent) level is indicated by three (two, one) stars.

Source: Eurostat Structural Business Statistics, AMADESUS database – WIFO calculations.

The coefficient of the share of creative industries remains positive and significant when the investment ratio is included in the regression equation (column ii). However, the coefficient of the employment share of the creative industries drops considerably when human capital is also added to the regional growth equation as indicated by column (iii). Furthermore, the standard error of the coefficient on the employment share of creative industries is enlarged due to multicollinearity between the share of creative industries and the share of workers with tertiary education (the correlation between the two variables is 0.44.). Wald-test statistics on joint significance indicate that both the employment share of creative industries and human capital are jointly significant at the 5 per cent level. Looking at the magnitude of the effects one can see that human capital is more important than the share of the creative industries in explaining regional growth. In particular, a one standard deviation increase in the tertiary graduates share leads to an increase in the growth rate of 0.5 percentage points ($=0.057 \cdot 0.084 \cdot 100$), whereas an increase in the employment share of CI's by one standard deviation raise the average annual growth rate by only 0.2 percentage points ($0.11 \cdot 0.017 \cdot 100$). The finding that human capital is one of the main drivers of regional economic growth is consistent with the literature (e.g. Glaeser et al., 2000).

As expected, lagged GDP per capita is significantly negative. The coefficient indicates that the speed of convergence is about 1 per cent per year, which is in line with earlier studies. The dummy variable for the capital city region is significantly negative indicating that these regions exhibit, ceteris paribus, lower growth rates of GDP per capita.

When the growth rate is measured as real growth of GDP per capita in EUR (rather than in current pps), one can also observe a positive and significant impact of both human capital and the share of the creative industries, as indicated by the Wald-test statistic (lower panel of Table 4.4). This means that the estimation results are not sensitive with respect to whether GDP is measured in EUR or in PPS.

To sum up, the key result of this section is that the initial share of the creative industries has a positive and significant effect on the growth rate of GDP per capita at the regional level for 10 EU countries. The positive growth effect of the creative industries remains robust even when general human capital is controlled for. This means that the real growth rate increases when other firms from the creative industries decide to locate nearby. The positive growth effects could be related to the fact that the resulting increased concentration of creative industry firms within a region facilitates knowledge spillovers. The result that aggregate growth depends on the industrial structure and/or the concentration of specific industries is consistent with Peneder (2003) who finds that aggregate growth is significantly positively related to technology-led and skill-intensive industries based on a sample of OECD countries.

5. The role of innovation in the CIs – the role of the CIs in innovation

Chapter 2 has extensively argued that CI-products are non-standardized. In fact, standardization itself sharply contradicts with distinctiveness, novelty or creativity. The fashion industry provides a good example for the steady pressure to remodel: modish customers quickly turn away from premium suppliers if they fail to produce a constant stream of trendsetting collections. Once an idea is widespread and available to all consumers, its exclusive value depletes and fashion products become mere clothes.

The output of creative industries is closely related to innovation; and their distinct market structure, as characterized by 'co-opetition', networks and clusters, can in turn be directly traced back to the distinctive nature of non-standardized creative goods. It is through functioning networks that CI-firms can produce and absorb fresh ideas and transform them into innovative products and services. To that effect, creativity and innovation are closely intertwined concepts (Green et al., 2007). While creativity refers to the act of generating new ideas, innovation is the process of taking ideas to market. The links between the creative industries and innovation are manifold.

First, the innovation performance of the CIs is above average, though often underrated due to the mostly non-technological nature of these activities (Stam et al., 2008 for the Netherlands; Bakhshi et al., 2008 and Bakhshi and McVittie, 2009, both for the UK; and Müller et al., 2009 for Austria). Most CI innovations hardly rely on R&D inputs, and may not even promote the primary generation of new knowledge. Instead, innovations are rather driven by acts of creativity and cooperative efforts (Potts, 2009).

Second, this specific innovation behaviour of CI firms helps to increase the firms' dynamic capabilities and thus contributes to the diffusion of new technologies. CI firms tend to make use of a large network of weak, heterogeneous relationships that ensure easy access to and fast absorption of new knowledge – an observation which accords well with the evolutionary/systemic perspective on innovation. Knowledge and technology transfer is also driven by a strong functional or regional (business-to-business) network structure (Potts et al., 2008).

Third, the dynamic development of the CIs is closely tied to technological progress and innovations in some key technologies developed elsewhere. Current means of mass (re)production, mass consumption, and commercialization of artistic/creative content have been made possible mostly by technological advances in the fields of information and communication technology (Cunningham et al., 2004). In fact, creative industries are intense users of ICT innovations in particular, as well as other new technologies. For instance, digital technologies and compression methods for audio and video signals that allow efficient storage and rapid transmission with little loss of quality have created new, low-cost means of sales distribution. Such a development accelerates the diffusion of technological innovations from the supply side (Mueller et al., 2009).

Lastly, consumer habits, particularly those of young buyers with considerable affinity for technology, play a crucial role from the demand side (for the role of consumers see Hartley, 2008).

Chapters 3.4 and 4 of this report have elaborated on the industrial and the spatial structure of the CIs. The present chapter details the effects of these sector specificities on the innovation performance and capacity of the creative industries and the wider economy. It discusses typical innovation modes and patterns such as collaborations with the academic sphere, inter-firm collaborations within the same or across adjacent (sub-) sectors, or cooperation

with clients. It also reflects on the links between ICT, innovation, intersectoral spillovers and performance of the CIs.

5.1 Innovation performance of the creative industries

Table 5.1 shows the percentage of firms introducing technological innovations during the three-year period 2004–2006. Product innovations are distinguished between introduction of new or significantly improved goods and services. In addition, there is information on new market products (either goods or services). Process innovations are distinguished between (i) methods of producing goods or services, (ii) logistics, delivery or distribution methods and (ii) supporting activities.

Table 5.1: Innovation output of selected creative industries, 2004-2006

NACE Rev. 1.1	Industry Description	Percentage of firms with introduction of new or significantly improved.....:							
		Pro-ducts	Ser-vices	Products and /or services	New market prod. or serv.	methods of producing goods or services	logistics, delivery or distrib. meth.	Sup-port. activ.	Produc-tion proces-ses
EU-West ^{a)}									
22.1+22.3	Publishing + reprod. of recorded media	14.6	13.8	20.4	8.7	16.0	10.7	22.9	30.7
	Other manufacturing sectors	16.9	7.3	20.4	7.3	16.4	4.6	11.1	21.9
72.2	Software consult.	34.1	36.3	50.2	33.1	20.1	10.6	28.3	35.6
74.2	Architecture	14.3	18.3	25.3	13.3	13.7	6.2	21.9	27.6
74.4	Advertising	8.2	16.5	20.2	9.7	6.9	7.6	18.6	20.8
92.1-92.4 (excl. 92.33), 92.72	Media, arts & entertainment ^{b)} other services	7.3	8.3	12.9	3.8	8.7	2.8	13.4	17.5
		8.0	7.5	12.7	4.6	5.7	6.6	12.9	18.1
EU-East ^{c)}									
22.1+22.3	Publishing+ reprod. of recorded media	12.5	9.4	17.9	12.6	9.5	7.7	10.2	17.5
	Other manufacturing sectors	15.6	6.4	18.3	9.7	14.2	6.4	11.1	19.1
72.2	Software consult.	32.1	38.2	49.7	32.1	22.7	12.6	24.0	36.5
74.2	Architecture	6.6	12.2	15.2	8.3	12.5	6.7	14.7	20.6
74.4	Advertising	13.6	20.7	27.0	17.8	19.6	7.3	14.4	26.1
	other services	5.6	9.3	12.5	6.8	6.5	7.5	10.4	15.2

Note: ^{a)} EU-West includes Spain, Sweden, Denmark, Italy, Ireland, Luxembourg and Portugal. ^{b)} Data is available for Spain only. ^{c)} EU-East include Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Cyprus, Malta, Romania,

Source: Community Innovation survey 2006, WIFO calculations at the Eurostat Safe Center Luxembourg. All numbers are weighted to reflect the population of firms.

Table 5.1 shows that creative industry firms are more innovative than firms belonging to non-creative industries. However, the innovativeness of the creative industry firms differs widely among subsectors: it is very high in software consulting and supply, and somewhat pronounced in architecture, but close to average in advertising and publishing. In particular, for the seven EU-15 countries for which data are available, half of the software firms introduced new or significantly improved services and/or goods, while for the non-creative segments of the services industries the share was only 12.7 per cent. Similar findings come from the Eastern Member States. The difference in innovativeness was even more pronounced when the focus is on market novelties: 33 per cent of western European software firms were innovative in the three-year period 2004–2006, as compared to only 4.6 per cent in the non-creative service industries. Architecture and advertising firms also showed a higher

propensity to introduce new or significantly improved services as compared to the non-creative service firms, but their innovation performance was distinctively lower in comparison to the software industry. Turning to process innovations, one can see that software firms again showed a higher proportion of innovators as compared to firms in the non-creative services. For the remaining creative industries the evidence is not clear-cut. While publishing shows a higher share of firms with new production processes, architecture and advertising exhibit no distinctively superior performance in this respect.

Firms in the publishing sector were not more successful in introducing new or significantly improved goods as compared to the non-creative sectors of the manufacturing industries. Servicing firms in the old Member States did, however, show some superior performance when it came to the introduction of new services and production processes, as well as new logistics, delivery or distribution methods.

The Community Innovation Survey (CIS) 2006 also asked firms about the kind of their innovation-input activities. These categories comprise internal R&D, the acquisition of external R&D services, the acquisition of externally developed machinery and equipment, the acquisition of other externally developed know-how, worker training activities, marketing measures and other preparations. The descriptive evidence shows that in the creative industries innovation is a much broader concept than just R&D-investment. It is apparent that R&D activities are only one of many inputs to the innovation process of CIs. In particular, training activities, acquisition of external know how and machinery are more relevant in the selected creative industries than in the non-creative industries. Non-R&D innovation activities are particularly relevant in software and architecture (Table 5.2).

Table 5.2: Innovations input activities, 2004-2006
percentage of firms

NACE Rev. 1.1	Industry Description	Intramural R&D	Extramural R&D	acquisition of new machinery	acquisition of external knowl.	training	market introduction	other preparations
EU West ^{a)}								
22.1+22.3	Publishing + reprod. of recorded media	13.6	10.0	26.8	9.4	16.5	14.7	11.2
	Other manufacturing sectors	11.9	6.4	15.2	3.5	8.3	6.5	5.7
72.2	Software consult.	46.8	14.1	21.3	16.5	32.6	25.0	19.8
74.2	Architecture	26.7	11.6	22.2	8.9	23.7	9.4	10.8
74.4	Advertising	11.1	3.2	17.5	4.2	11.6	6.9	6.0
92.1-92.4 (excl. 92.33), 92.72	Media, arts & entertainment ^{b)} other services	3.3 6.2	1.8 4.2	12.0 12.5	0.9 3.2	1.9 7.7	3.2 5.3	0.4 3.7
EU-East ^{c)}								
22.1+22.3	Publishing+ reprod. of recorded media	12.6	7.2	28.8	16.5	19.7	21.6	11.7
	Other manufacturing sectors	14.9	7.1	29.1	7.6	18.8	13.3	14.4
72.2	Software consult.	52.5	15.9	52.0	26.5	48.2	35.2	26.5
74.2	Architecture	19.2	8.3	31.8	13.9	26.8	10.5	11.6
74.4	Advertising	26.0	16.8	30.2	21.6	29.2	22.6	32.8
	other services	12.0	7.6	25.1	8.9	18.4	13.6	11.0

Note: ^{a)} EU-West includes Spain, Sweden, Denmark, Italy, Ireland, Luxembourg and Portugal. ^{b)} Data is available for Spain only. ^{c)} EU-East include Bulgaria, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Cyprus, Malta, Romania,

Source: Community Innovation survey 2006, WIFO calculations at the Eurostat Safe Center Luxembourg. All numbers are weighted to reflect the population of firms.

Creative industry firms are not only more innovative in general, but they are also early adopters of internet and e-business practices (Table 5.3). Evidence based on the e-business w@tch survey 2005 for seven EU countries shows that more than 30 per cent of these creative industry firms had adopted e-business activities by 2000 or earlier, compared to 17 per cent for the remaining industries. Unreported evidence of the e-business w@tch survey also shows that the majority of technological innovations were enabled by ICT (for instance, 90 per cent of innovations in software consultancy).

Table 5.3: Year of adoption the Internet and e-business practices

Year of adoption	Year of adoption of internet			Year of adoption	Year of adoption of e-business practices		
	publishing	software consultancy	remaining industries		publishing	software consultancy	remaining industries
>1995	9	25	7	>2000	32	30	17
1995-1999	55	46	38	2000-2002	44	53	43
2000-2005	36	29	54	2003-2005	24	18	39

Note: The underlying question is: Since when has your company been using the Internet? And "When did your company offer goods or services for sale online for the first time."

Source: e-business w@tch survey 2005 based on EU-7 countries - WIFO calculations.

5.2 Indirect effects

Following the system of innovation literature, the ability of firms and industries to generate innovations depends not only on the performance of individual actors, but also on their interaction and organisation. There are many additional actors, including other firms (suppliers, customers, subcontractors, and competing firms) and intermediary organisations (consultants, technology centres, governmental offices, and regulatory agencies), as well as public and private research centres and universities. It is within these networks that agents are able to imitate, learn about, and eventually create new products and ideas. Müller et al. (2009) note that, as a rich source of ideas and knowledge, the creative industries exhibit strong positive external effects on other innovating firms, such that a blind focus on their own innovative output is likely to underestimate the importance of the creative industries for the greater innovation system. In the first place, enterprises in the creative industry sector tend to be heavily involved in business-to-business activities (see section 4.1), hence creative supply-chain relationships may be an important factor for productivity gains and innovation. Innovation effects might reflect the direct provision of innovative services in the case of advertising companies, say, that are developing new brands for their clients, or design consultancies that are offering product design services to customers. Knowledge spillovers may also occur if creative working practices "rub off" on to their business clients in an unremunerated way. A second mechanism we consider is the possibility that the creative industries support local innovation systems through channels – including knowledge spillovers – that operate specifically at the local level. In this context it has been observed that much of the CI business model builds on large network of weak, heterogeneous relationships that ensure easy access and fast absorption of new knowledge. Networks serve as knowledge pipelines through which innovators can take advantage of other actors' experiences. By consulting these peers they can utilize a larger knowledge base, learn from best practice and, even more importantly, avoid known mistakes. Empirical evidence shows that creative industries are prone to all kinds of innovation cooperation. Furthermore, fluid labour market conditions for creative professionals promote cross-sectoral knowledge spillovers since many of them working outside the creative industries.

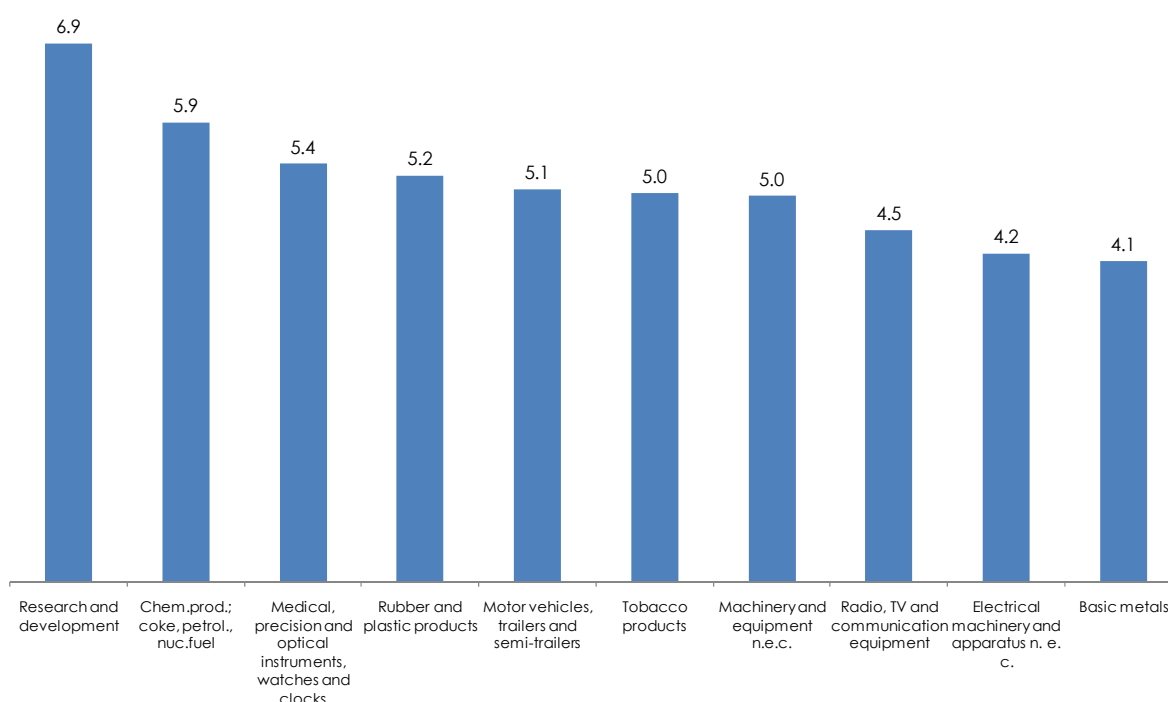
5.2.1 Support of innovation performance through supply chain relationships

As prime producers of intellectual property, the creative industries are expected to be a particularly attractive source of external knowledge for innovating firms. They offer a diverse bundle of creative products and services, ranging from ideas for innovations to R&D support and product design (Müller et al., 2009). The design sector provides an especially good example of the supply chain induced effects on the innovation performance of the wider economy. This sector has gained significant importance over the past years and has earned itself a steady place in contemporary production. Figure 5.1 and Figure 5.2 show the extent to which other industries make use of inputs from the design sector. Note that the figure displays only evidence for the top-10 industries. Detailed evidence for all industries is shifted to Table A.2 in the Appendix. The descriptive statistics are calculated using the CIS 2006 microdata for a sample of 15 EU Member States.

Figure 5.1 shows the proportion of firms that used industrial design registration as a protection method. A design registration offers the opportunity to protect intellectual property rights against others who subsequently market products with the same or similar appearance.

Figure 5.1: Industrial design registrations – top 10 industries^{a)}, 2004–2006

Number of design registrations in per cent of total number of firms in the given industry



Note: The sample includes Bulgaria, Cyprus, Czech Republic, Estonia, Spain, Hungary, Ireland, Lithuania, Luxembourg, Latvia, Malta, Norway, Portugal, Romania and Slovakia. All numbers are weighted to reflect the population of firms.

^{a)}Detailed evidence for all industries is shifted to Table A.2 in the Appendix.

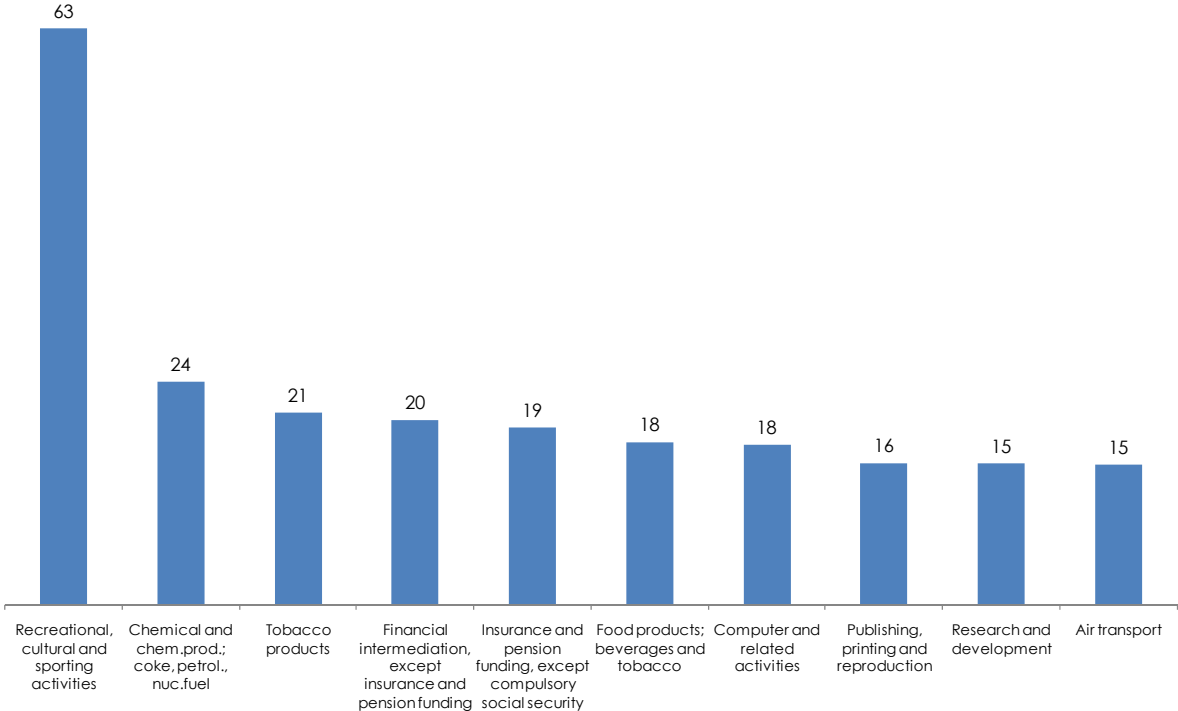
Source: Community Innovation survey 2006, WIFO calculations at the Eurostat Safe Centre Luxembourg.

One can see that industrial design registrations are most important in manufacturing industries such as chemicals and pharmaceuticals, minerals, glass and ceramics, motor vehicles, tobacco, and machinery. This clearly shows that some forms of creativity, such as design, can be found in all industries; they are not restricted to a limited group of creative industry firms.

Another way to ascertain how and to what extent designers affect innovations in the greater economy is to look at the proportion of enterprises that introduce significant changes to the

design of goods and services. Figure 5.2 shows that product design innovations can be found in all industries – not only in the core cultural domains. In the chemical and pharmaceuticals sector, one-fourth of the firms introduced product design innovations during the period 2004–2006. A higher than average proportion of design innovators can be found in tobacco, banking, insurance, food, and software. As expected, design innovations are less frequently reported in non-manufacturing industries such as transport and energy and water supply.

Figure 5.2: Changed product design of goods and services – top 10 industries^{a)}, 2004–2006
In per cent of total number of firms in the given industry

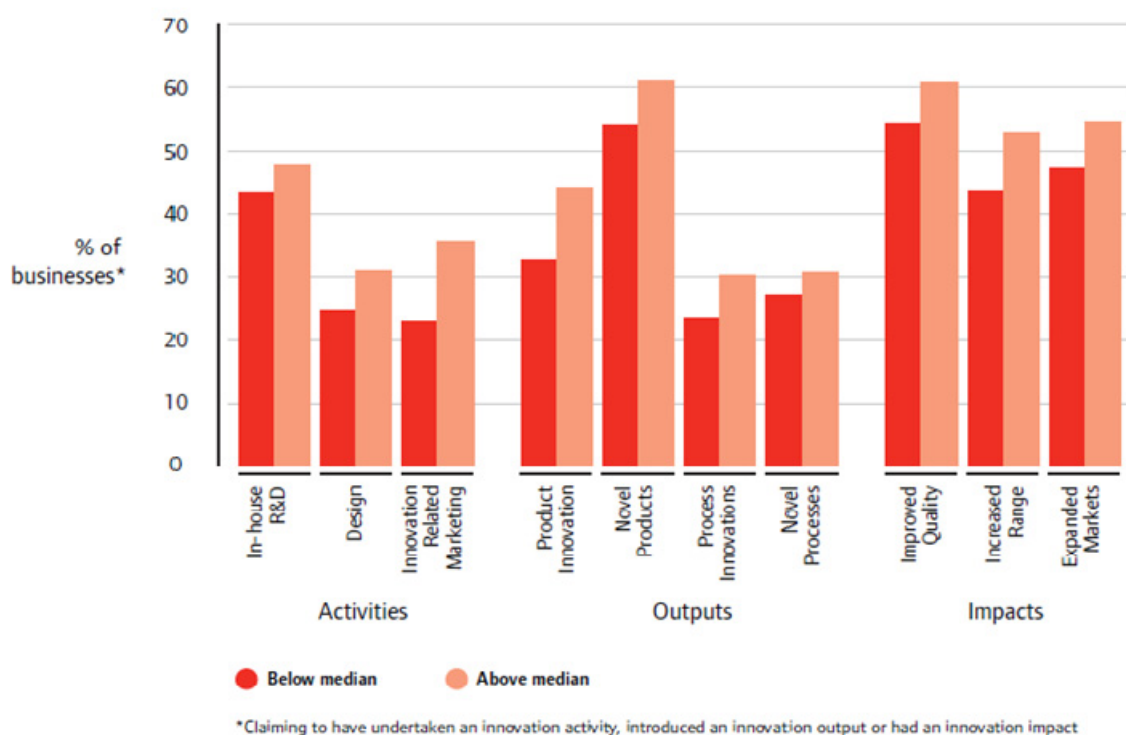


Note: The sample includes Bulgaria, Cyprus, Czech Republic, Estonia, Spain, Hungary, Ireland, Lithuania, Luxembourg, Latvia, Malta, Norway, Portugal, Romania and Slovakia. All numbers are weighted to reflect the population of firms.
^{a)}Detailed evidence for all industries is shifted to Table A.2 in the Appendix.

Source: Community Innovation survey 2006, WIFO calculations at the Eurostat Safe Center Luxembourg.

More generally, Bakhshi et al. (2008) show that for a wide range of innovation measures, firms with stronger links to the creative industries have stronger innovation performance. The underlying data consist of input-output tables for the UK at the three-digit level, combined with the fourth UK Community Innovation Survey. More particularly, Figure 5.3 shows that firms in industries that exhibit above-median B2B spending on creative industry products – expressed as a percentage of their gross output – have stronger innovation performance than firms in industries with below-median B2B spending. Overall this indicates that the creative industries play a significant role in the transfer of knowledge, ideas, and innovation in business-to-business transactions. This transfer becomes especially important in the flow of tacit knowledge in the sense of Polanyi (1977), who finds that the transfer hinges on personal communication in a creative environment.

Figure 5.3: Innovation performance for industries with strongest and weakest creative sector linkages (purchases of creative products), UK, 2002-2004



Source: ONS UK Input-Output Supply and Use Tables and Fourth DIUS UK Innovation Survey, used in Bakhshi et al. (2008).

This finding is consistent with more formal cross-section statistical analysis. In particular, econometric models explaining variations in innovative behaviour across firms suggest that firms in industries with stronger B2B linkages to creative industries are, all else equal, significantly more likely to introduce product innovations. The estimates suggest that firms that spend double the average amount on creative products – 6 per cent compared to 3 per cent of their gross output – are 25 per cent more likely to introduce product innovations new either to the firm or to the market. To put this result into perspective, according to the model these creative linkage impacts are similar in magnitude to the effect that access to government support has on innovation.

Note that the direction of causality between spending on creative inputs and innovation cannot be established using these cross-sectional data alone. It is also difficult to be certain whether it is the direct effect of creative products as inputs to the innovation process, or knowledge transfer – possibly unremunerated – from the creative industries that is driving any causal effect from creative spending on innovation. By interacting measures of the extent to which firms acquire innovation-related information from and cooperate on innovation with suppliers (again, drawn from the UK Innovation Survey) with the level of spending on creative inputs, Bakhshi et al. (2008) find some evidence that knowledge transfers from creative suppliers leads to improvements in product range and quality.

5.2.2 Knowledge spillovers

As previously argued, networking and innovation activities in the creative industries are believed to be highly interdependent phenomena. The building up of network capital is not exogenous to the firm and is clearly interrelated with the outcome of innovation. Both the specific market conditions CI firms encounter and certain well-defined firm characteristics

make for potential success in business and, at the same time, affect the way business in the CIs is organized.

Networking and cooperation between the CIs and the wider economy may take place during the production process and in marketing and sales (see section 5.2.1). These modes of cooperation with business partners are evaluated as the most decisive ones. Moreover, cooperation may happen in research and innovation (section 5.2.1 and 5.2.2). A major part of such cooperation is embedded in a complex project ecology of enduring ties and institutions (Grabher, 1993). The business model of the CIs involves a sequence of projects with frequently changing teams that permit firms to accumulate and fall back on a wide range of resources from different fields (see section 5.2.2.3). Project members are not only provided with diverse learning opportunities, they can also use their contacts as a source to 'remember' information (Grabher, 1993). Increasingly, small, highly specialized CI companies merely initiate and organize new projects and outsource the actual creative production to loosely tied external professionals. Such flexible collaboration blurs the boundaries of individual firms, while at the same time making organizational and personal networks crucially important.

5.2.2.1 Tapping external sources of innovation

Firms tap external knowledge in various ways. One source of knowledge flow relates to the supply side linkages discussed above, i.e. the suppliers and customers provide valuable information for innovation activities. Other sources of information are research institutions (e.g. universities), conferences, journals, international and national fairs and exhibitions.

Table 5.4 shows the firms' perceptions about the importance of the diverse external sources of knowledge. For software and architecture firms, clients and customers are regarded as the most important source of innovation. For the former this is consistent with Segelod and Jordan (2004) who find linkages with customers to be the most important ones during the whole innovation process. The second most important source of information is the group of suppliers followed by conferences, trade fairs, exhibitions and scientific journals, trade/technical publications.

More importantly, one can see that the different knowledge sources are more frequently used in both software and architecture firms than in the non-creative (services) industries. This indicates that the flow of information for creating technological innovations is more important in these two subsectors of the creative industries than in non-creative industries. For instance, 73 per cent of the software firms with innovations (i.e. carrying out product and/or process innovations) answered that clients and customers are important source of innovation (of medium or high degree of importance) compared to 39 per cent in the non-creative service industries. Another example refers to knowledge sourcing from universities: About one fourth of the software and architecture firms regard university research as an important source of information for the innovation process compared to 10 per cent for non creative service industries. The results accord well with the results from previous empirical studies. In particular, a number of papers confirm that knowledge interactions are especially important for the software industry (Grimaldi and Torrisi, 2001; Trippel et al., 2010 and Weterings and Koster, 2007). Three of the remaining knowledge sources (i.e. government or public research institutes, scientific journals, trade/technical publications and consultants, commercial labs, or private R&D institutes) are regarded as much more important in both software and architecture firms than in firms outside the creative industries. However, in the advertising sector the degree of

importance of the information sources does not differ much from the non-creative service firms. The same also holds for publishing.

Table 5.4: Importance of selected sources of information for innovation, 2004-2006

Percentage of firms

NACE Rev. 1.1	Industry Description	Suppliers				clients or customers			
		not used	low	medium	high	not used	low	medium	high
22.1+22.3	Publ.; Repr.of rec. media	30	14	31	26	38	17	27	17
	other manufacturing	31	13	32	23	40	15	24	21
72.2	Software	19	25	35	20	14	13	35	38
74.2	Architecture	18	22	34	25	27	22	33	18
74.4	Advertising	47	8	34	11	39	19	30	12
	other services	30	14	31	25	45	16	21	18
		competitors				consultants, commercial labs, or private R&D inst.			
NACE Rev. 1.1	Industry Description	not used	low	medium	high	not used	low	medium	high
22.1+22.3	Publ.; Repr.of rec. media	49	21	16	14	66	17	12	6
	other manufacturing	47	20	23	11	65	18	13	5
72.2	Software	26	27	34	13	50	23	18	9
74.2	Architecture	40	26	26	7	56	20	20	4
74.4	Advertising	56	19	23	2	66	16	15	3
	other services	49	19	22	10	69	14	11	6
		universities/higher education institutes				government or public research institutes			
NACE Rev. 1.1	Industry Description	not used	low	medium	high	not used	low	medium	high
22.1+22.3	Publ.; Repr.of rec. media	78	11	5	5	82	11	4	3
	other manufacturing	76	14	8	3	80	13	5	1
72.2	Software	56	20	14	10	72	17	8	4
74.2	Architecture	55	21	17	8	67	18	13	2
74.4	Advertising	82	7	10	0	91	8	1	1
	other services	79	11	6	3	84	10	5	1
		conferences, trade fairs, exhibitions				scientific journals, trade/tech. publications			
NACE Rev. 1.1	Industry Description	not used	low	medium	high	not used	low	medium	high
22.1+22.3	Publ.; Repr.of rec. media	48	18	22	13	54	15	21	11
	other manufacturing	47	17	25	11	49	20	24	6
72.2	Software	27	29	33	11	26	29	32	14
74.2	Architecture	29	27	34	11	29	24	36	12
74.4	Advertising	44	31	15	11	46	22	23	9
	other services	53	18	21	9	55	19	19	7
		professional and industry associations							
NACE Rev. 1.1	Industry Description	not used	low	medium	high				
22.1+22.3	Publ.; Repr.of rec. media	58	20	16	6				
	other manufacturing	61	20	14	4				
72.2	Software	46	28	20	5				
74.2	Architecture	45	26	24	5				
74.4	Advertising	55	24	16	4				
	other services	62	18	14	6				

Note: The sample includes: Bulgaria, Cyprus, Czech Republic, Estonia, Spain, Hungary, Lithuania, Luxembourg, Latvia, Malta, Portugal, Romania, Slovenia and Slovakia. All numbers are weighted to reflect the population of firms. Source: Community Innovation survey 2006, WIFO calculations at the Eurostat Safe Center Luxembourg.

5.2.2.2 Cooperation in innovation

It is well known that firms collaborate with a range of partners. Customers can represent a major partner of collaboration, and suppliers of technical services are also important partners in innovation activities. Innovation cooperation and collaboration with universities can provide sources of information, access to technical resources and complementary assets. Descriptive evidence based on CIS 2006 shows that in the EU-West and EU-East countries for which data are available, about one third of the software and architecture firms are actually engaged in collaborations to innovate. In the Western EU countries this share is about twice as high as compared to firms in the non-creative services sector; in the Eastern EU countries it is 13 and 8 percentage points higher than in the remaining service sector (Table 5.5).

Table 5.5 Cooperation in Innovation, 2004 – 2006

Percentage of firms

NACE Rev. 1.1	Industry Description	overall coop.	other enterpr. within group	supp-liers	clients or cust-omers	com-petitors	Consult., com.labs, private R&D inst.	Uni., higher edu. inst.	Government or public res. inst.
EU West									
22.1+22.3	Publishing; Reprod. of recorded media other	21.1	7.8	24.7	10.8	10.3	9.4	11.7	2.7
	manufacturing	17.3	5.9	12.4	9.2	4.3	7.3	7.6	5.1
72.2	Software	32.4	13.6	15.3	27.6	11.1	13.6	18.5	8.2
74.2	Architecture	29.7	8.0	22.1	19.3	10.3	12.1	18.5	13.2
74.4	Advertising	18.9	8.3	22.0	10.0	1.4	7.8	2.1	1.4
	other services	15.4	5.9	12.2	7.5	4.8	6.1	5.4	3.2
EU East									
22.1+22.3	Publishing; Reprod. of recorded media other	36.5	11.3	25.5	21.1	17.5	10.1	8.0	6.2
	manufacturing	33.5	8.6	22.3	17.8	11.3	11.8	9.8	6.1
72.2	Software	47.1	18.5	40.5	41.0	20.3	20.6	27.5	13.8
74.2	Architecture	41.9	7.2	21.2	19.2	10.9	10.5	10.0	5.5
74.4	Advertising	25.1	6.4	11.8	7.6	3.6	9.3	4.7	0.5
	other services	34.1	7.0	13.4	10.7	7.4	7.1	5.6	3.7

Note: The sample includes Bulgaria, Cyprus, Czech Republic, Estonia, Spain, Hungary, Lithuania, Luxembourg, Latvia, Malta, Portugal, Romania, Slovenia and Slovakia. All numbers are weighted to reflect the population of firms. Source: Community Innovation survey 2006, WIFO calculations at the Eurostat Safe Center Luxembourg.

Turning to the different cooperation partners one can see that for software firms customers emerged as the most common external collaboration partners, being involved in innovation activities of about 28 per cent for EU-West and 40 per cent for EU-East firms. Suppliers are the most important cooperation partners for architecture and advertising.

It is interesting to note that in the EU-West countries universities are the second most important partner for software firms (with a percentage of firms of 18.5) and the third most important partner for architects (also 18.5 per cent). Firms in non-creative industries rank the importance of academic cooperation partners far lower. In the EU-East countries universities are also much more relevant for software firms and architecture than for the rest of the economy. Overall this suggests that the importance of interaction between science and industry is most pronounced in software and architecture. It appears that these industries rely to a larger extent on new knowledge developed by universities.

Table 5.6 shows the proportion of firms engaged in international innovation cooperation with external partners (excluding partners within the own enterprise group).

Table 5.6: International innovation cooperation (with external partners), 2004-2006

Percentage of firms

Industry			
NACE Rev. 1.1	Description	EU-West	EU-East
22.1+22.3	Publishing + Reproduction of recorded media	9.5	14.4
	Other manufacturing	8.0	16.9
72.2	Software	19.6	31.9
74.2	Architecture	14.4	12.1
74.4	Advertising	14.8	2.8
	other services	6.9	8.3

Note: The sample includes Bulgaria, Cyprus, Czech Republic, Estonia, Spain, Hungary, Lithuania, Luxembourg, Latvia, Malta, Portugal, Romania, Slovenia and Slovakia. All numbers are weighted to reflect the population of firms. Source: Community Innovation survey 2006 – WIFO calculations at the Eurostat Safe Center in Luxembourg;

One can see that less than 9 per cent of the services firms are cooperating with international partners. This share rises to 20 and 32 per cent in the software industry in EU-West and East respectively and 14 and 12 per cent in architecture. The advertising industry in EU-West tends also to cooperate more often with international partners than firms belonging to the non-creative service sector.

5.2.2.3 Human capital linkages

Since the development of creative goods and services is very complex and difficult to standardize, the CI business model does not accord well with traditional nine-to-five jobs. Instead, irregular forms of employment serve as a tool to maximize creativity. As a consequence, the associated labour market is extremely fluid and competitive, with many individuals being engaged in (often low paid) part-time or temporary forms of employment (Kooyman et al., 2010). Frequently changing project teams facilitate a free flow of information and fuel firms with fresh ideas, which they may take up and turn into innovations. In this way, project teams are used to boost workers' creative abilities by exposing them to different settings and environments. Such temporary associations also have the advantage that they facilitate interactive learning and innovation processes without risking the negative lock-in effects which are associated with long term closed networks. The case of Dutch architects constitutes a related example (Box 5.1).

To that effect, the impact of CI activities on innovation in the overall economy is not restricted to forward and backward linkages within industries, nor does knowledge spill over through only formal channels of innovation cooperation. Potts et al. (2008) argue that creative industries play a crucial role in the implementation of fifth generation innovation processes, as identified by Rothwell (1992 and 1994). According to this literature, behavioral status quo biases, myopia, and risk aversion lead to insufficient implementation of innovative processes. Creative Industries can supply innovation services and bring a culture of openness, creativity and entrepreneurship to rigid companies and thereby foster the complex social processes required for the implementation of fifth generation innovation processes. They also help as carriers of communication and coordinators between the different partners in the innovation process. Besides offering a common culture, the creative industries are instrumental in the building of communities. Most importantly, they help to draw out and visualize the future and thereby foster imagination. Moreover, they can provide a different point of view that helps to give an unbiased critique of common practices that have become a blind spot to the companies themselves. New technologies can only spread if they fit into a lifestyle and way of living.

Box 5.1 – Knowledge spillovers through labour mobility – the case of Dutch architects

In the Netherlands, architectural practices are highly concentrated in Rotterdam. The spatial concentration seems to be even stronger than in other creative industries as many famous architectural firms not only locate next to each other, but in some cases even share the same office spaces within the same buildings (Kloosterman, 2008). Nevertheless inter-firm linkages and project-based collaborations among 'strong-idea architects' are extremely rare. Famous Dutch architects generally refuse to cooperate with each other, not because of fear that others would steal their idea but to protect themselves from diluting their own strong ideas with those of others. It seems that "the drive to create an eye-catching building with the architect's own evident signature prevents project-based forms of collaboration as in that case the authorship of the design threatens to get blurred." (Kloosterman, 2008, p. 138) Even where architectural firms share the entire office infrastructure, such as computers, printers, etc., they do not exchange workers and ideas.

Dutch architects have found other meaningful ways to exchange knowledge, as the sector's extremely high labor mobility shows. Highly successful architects get between 20 and 50 applications per week. Around 90 per cent of trainees come from abroad. As one interviewed architect notes: "After two years, about half of the workers leave" and "newcomers stay, on average, one or one-and-half year" (Kloosterman, 2008, p. 9). In other words, the international reputation of Dutch architectural design allows local firms not only to access large amounts of cheap and hard working labour, but also to reap the fresh ideas they take with them from around the world.

Moreover, also formal and informal institutions play a significant role in facilitating knowledge spillovers. Architecture being a well-developed field, there are a number of important institutions, which facilitate the dissemination and exchange of ideas, such as specialized newspapers, universities, architectural boards and juries. Nearly all interviewed architects work also as teachers or lecturers at a school of architecture, mainly to keep up with new developments in the field, but also to find new, talented and suitable workers for their own firms. Again this practice ensures a strong inflow of knowledge embodied in specialized, highly qualified professionals. Above all also informal networks and social meeting places play an important role as conduits for knowledge.

While Dutch architectural firms are extremely reluctant to exchange ideas between competitors with similarly strong ideas, the threshold between architects and spin-offs seems to be low. Many famous architects do not only allow their young workers to participate in competitions on their own, they even encourage them to set up their own business. We can assume that by transferring the necessary tacit knowledge to these spin-offs, – as in the case of Rem Koolhaas' Office of Metropolitan Architecture (OMA) – established parent companies hope to pass on their conceptual approaches to future generations and eventually even start their own architectural school.

Creative Industries are often centers of such lifestyle innovations and export this culture to the rest of the economy (Dopfer and Potts, 2008). This lifestyle and experience with change processes allows creative industries to help other industries to break out of habits and break resistance to change. Other authors, too, have stressed the importance of creative industries in influencing the stock of human capital. Cunningham and Higgs (2009) argue that creative industries provide the social environment for generating innovation, and offer related innovation services. As Müller et al. (2009) argue, labor turnover leads to workers from the creative industries to entering other industries and thereby bringing knowledge and a culture of innovation to other sectors. In the same vein, the CIs are seen at the center of fifth generation innovation thinking by transferring personnel and talent between firms.

6. The policy dimension

The last part of this report reflects on the results of the previous chapters and places innovation and competitiveness of the CIs in a broader policy context (section 6.1). The second section provides a mapping of CI policies in EU Member States. The report concludes with some recommendations for policy makers and outlines what could be done at a European level to support the CIs as a tool for innovation and competitiveness.

6.1 Policy rationales and priorities

There is widespread agreement among economists in favour of public support for the cultural and creative industries (Blaug, 2001). Irrespective of the general agreement as to the value of CI policy, there remains substantial disagreement about the best objectives and forms of intervention. Answers vary according to the perspectives on the intended roles of such policies, where one can broadly distinguish the normative arguments from the positive, or economic, rationales.

6.1.1 The normative perspective

The normative arguments act on the assumption that art is a merit good, i.e. it is desirable for society to possess larger amounts of this good than private agents are able or willing to pay for. At its core this position assumes that people are unable or unwilling to appreciate the full value of creative and cultural products, and hence policy intervention would be necessary to educate the masses accordingly (Ginsburgh, 2001). According to this view, the CIs need to be subsidised if they are to survive, either by means of welfare programs to sustain creatives (Throsby, 2001), or, alternatively, by funding the consumption of creative products. Appropriate measures would include income transfers, public provision of affordable housing near city-centre "scenes", subsidised tickets for cultural events, etc.

Proponents of such policies not only put forward the argument of art for art's sake. They also claim such policies to be instrumental in enforcing some of the quaternary economic effects, such as social cohesion in run-down neighbourhoods and cultural participation of the socially deprived. Moreover, the CIs could help to regenerate and renew redundant buildings and depressed urban areas and thereby play a role in city renovation campaigns. Pratt (2005) lists ideological, political, and social motives for the support of cultural industries. The perspectives span the humanist viewpoint, which emphasises that culture is a relevant aspect of civilisation, to an aesthetic perception and also argue that culture and cultural achievement constitute important elements of national identity. Ultimately, this reasoning rests on the assumption that the welfare-enhancing effects of CI consumption would more than outweigh the budget cost of such policies.

6.1.2 The economic perspective

The economic rationale for government intervention in favour of the CIs starts out from the notion that this sector constitutes a significant locus of economic dynamism in the post-industrial world. This view evaluates cultural events, institutions, and activities according to their significance for, or their positive contribution to, the aggregate economy. Our survey among CI policy makers in EU Member States indicates their increased awareness of the creative industries, including diverse definitions and concepts to stimulate growth and innovation (see section 6.2). Acknowledging the substantial amount of empirical evidence on the primary and wider economic impacts of the CIs a recent report (OMC, 2009) has

produced an extensive list of measures that would be instrumental in fostering the economic base of the CIs and in encouraging cultural and creative entrepreneurship. They group around broader objectives such as:

- (i) setting proper pre-conditions (awareness raising, enhancement of creative competences in business education),
- (ii) promoting an entrepreneurial environment (through business mentoring, PPP initiatives, the provision of physical and digital infrastructure),
- (iii) teaching managerial skills to the creatives,
- (iv) providing better access to finance,

and much else besides. However, taken by itself the case of significant economic impact of some sector establishes no particular role for sector-specific policies. Authors such as Cowen (1998) argue that the CIs should be ruled by the market alone, the telling title of his seminal publication being "In Praise of Commercial Culture". He rejects the idea that the case of creative products imply a particular degree of social desirability. Though the CIs might unfold substantial primary economic impacts, these would be structurally neutral in the sense that the growth of the CIs entails no more and no less of an effect on aggregate economic value or aggregate welfare than would the growth of any other industry. As to the secondary economic impact of the CIs (local growth of the CIs unfolds multiplier effects in adjacent industries or regions) there would be no a priori reason to reject the idea that the linkages identified were market-mediated; on their own they would not justify policy intervention. This perspective allows acknowledgement of the sector specificities of the CIs, but at the same time it claims that other industries, too, face their specificities. There would be no reason to prioritise any of these sectoral challenges, rather horizontal policies should be implemented to set up proper framework conditions and (re-)establish competitive markets and environments. In this spirit a recent green paper launched by the European Commission (EC 2010) emphasises the importance of fair market access and the role of competition policy in "creating and maintaining the level playing field which ensures that there are no unjustified barriers to entry" (EC 2010, p. 7). Accordingly, a policy agenda in support of the creative industries would have to include issues such as the liberalisation of creative services and labour markets, the liberalisation of trade in cultural/creative goods and services, the reduction of regulatory burdens on creative entrepreneurs, and the protection of intellectual property rights.

Aside from the establishment of first-best framework conditions, the existence of market failure and system failures opens the door for policy intervention. The general support for policy intervention in the area of CIs points at the overall consensus that the CIs do indeed constitute a case of market or system failure in the sense that they give rise to externalities, information failures (Frey, 2003), or structural, institutional, and regulatory deficiencies, which negatively impact on CI activities. These policy rationales apply more strongly to the cultural as opposed to the more market-oriented segments of the creative industries; however, the role of policy would still be to correct these failures should the occasion arise.

6.1.2.1 Market failures

Producers of CI goods and services face considerable uncertainties in demand. Since the returns are highly speculative, CI activities are hard to predict. Still having incomplete information on the pay-offs of their activities, CI firms are unable to make rational profit-maximising decisions – one of the core assumptions in the neoclassical benchmark model.

Information failures apply especially to the financing of CI activities. Even if creative entrepreneurs demonstrate perfect foresight with respect to their future pay-offs, they still face severe difficulties in credibly proving the value of their projects to potential investors, because this would involve revealing information about the originality of the project. However, the CI business model is based on the notion of uniqueness and exploiting first-mover advantages; imitation at an early stage would thus be a substantial threat to setting up a new undertaking.

Neoclassical thinking oscillates between the ideas of competitive markets and a well-functioning price mechanism. In principle, entrepreneurial and financial risks could be traded away in markets, especially in insurance. However, the production of CI goods involves a whole range of unknowns and contingencies, and markets to underwrite all of these do not exist -- at least not to the necessary extent. Furthermore, since ex ante both the outcome value and probability distribution of a CI venture are uncertain, there is no reason to believe that competitive markets price such risks appropriately and allocate resources for CI activities efficiently.

In this perspective, demand uncertainties are not the prime problem – these could be met with smartly designed public procurement programmes – but rather the non-existence of proper markets and the lack of well functioning price mechanisms. To that effect a prime policy task would be to remove barriers faced by CI firms in accessing finance, especially insofar as they relate to small and midsize enterprises (SMEs) and the start-up phase. Related policy measures involve improving access to (public) finance, taking initiatives to further develop venture funds, and improving venture market regulation, or reducing regulatory burdens.

The distinguishing feature of creative products is that their value arises mainly in the social sphere, which introduces another source of market failure: strong externalities, both in the production and consumption of CI products, so that prices – if they exist – lose their signaling function and fail in their coordinating role of matching production and consumption plans. When CI activities inevitably link production and consumption – and manufacturing and service in the greater economy – the core policy agenda for CIs would relate to the upgrading of linkages so as to stimulate the emergence of vibrant clusters (Pratt, 2008). Besides addressing the specific market failures that hamper the activities of the CIs, policies should therefore be particularly aware of (cross-) sectoral linkages and promote clustering.

Among other things, this view entails considerable implications as far as the protection of intellectual property rights (IPR) is concerned. Clearly, a too rigid handling of IPR raises the transaction costs of knowledge spillovers. For this reason a stronger use of Creative Commons licences for intellectual copyrights and open access policies may be more instrumental in fostering the technological and legal basis of the CI business model. Yet the principles of openness and participation may sometimes be hard to realise. Apparently, the use of Creative Commons challenges business models based on originality and uniqueness, and the unconditional enforcement of cooperation among competitors could be contested by the target groups of such policies.

A similar caveat applies to the idea of making the creatives “ready for the market” – by providing entrepreneurial training, teaching managerial skills and the fundamentals of business and finance. Many of the creatives may simply not care for the profit-making side of their business but just want to make a living. Moreover, those of them who might capture the entrepreneurial spirit may not turn out to be particularly successful in economic terms. To the extent to which the creatives do not conform to the business growth model, either willingly or

unwillingly, there will be no wider economic impact of the CIs and the underlying policy rationales stand on shaky ground (Evans, 2009).

6.1.2.2 System failures

Section 5.2 makes a strong point that the CIs accord well with the systemic and evolutionary concept of innovation. This perspective locates the bottlenecks of innovation not so much in the primary generation of knowledge, but in a more fundamental problem. In the first place, firms are said to suffer from 'bounded vision' (Fransman, 1990). When faced with high-pressure deadlines, managers tend to disregard the value of new knowledge, unless it emerges from areas where the firm in question is currently carrying out activities. If firms are aware of the importance of new knowledge, their ability to transfer, assimilate, and ultimately apply knowledge to commercial ends often requires a (much too) high level of absorptive capacity. Modern approaches to innovation policy therefore focus on the acquisition of learning capabilities and problem-solving skills. In this view, the contribution of the CIs to the economy would not be argued in terms of their impact on economic value, but rather with reference to their specific mindset. When the CIs are seen as a "higher-order system that operates on the economic system" (Potts and Cunningham, 2008, p. 10), then supporting them would involve promoting a distinct way of thinking and social interaction that is conducive to the whole functioning of the innovation system. Hence, policy rationales based on the tertiary economic impact would be eager to build upon the original problem-solving skills of the creatives. They would try to establish the CIs as a kind of role model for the more traditional parts of the economy, whom they would show how to successfully master (or "experience") the unknown, how to deal with the complexities and unforeseen aspects of daily business life, and how to escape from lock-ins; in short, how to be creative (Potts and Morrison, 2009).

So as to overcome behavioural failures (myopia, risk aversion, bounded vision and the like) the UK introduced a 'Creative Credit' scheme.¹ Sweden also initiated a very innovative program to systematically establish creative people as agents of (ex-)change: once a week artists are sent to affiliated companies. As non-traditional consultants and a source of inspiration they provide a fresh mirror image of the workplace and its staff (Leoon Consulting, 2011). One might wonder, however, whether the special abilities necessary to overcome behavioural failures are actually confined to a creative class. Why not regularly invite the nearby kindergarten or a bunch of teenage kids to join business meetings? Sure enough they would make for a rich source of inspiration and would love to share their original and unorthodox problem solving skills. The general point to raise is that policy makers should be very aware of the actually added value of novel schemes that address an increase in firms' creativity and innovativeness.

Some related and very convincing best-practise examples can be found in the area of social innovation: actors simulating mental disorders (borderline personality disorders, depression, schizophrenia, etc.) to help medical students in developing their communication skills with future patients; artists rehearsing musical and theatre performances with prisoners and at-risk youth, thereby teaching them things such as team spirit, discipline, reliability, and shared responsibility for the success a joint project – indispensable social skills and prerequisites for later employability. Activities of the creative sector that render practical value for society give rise to quaternary economic effects.

¹ This is an innovation vouchers scheme which aims to create new business-to-business relationships between creative firms and SMEs in other sectors of the economy. It contrasts with traditional voucher schemes which are aimed at stimulating knowledge transfer from universities to businesses. See www.creative-credits.org.uk

Reflecting once more on the conceptual foundations of the cultural/creative economy (chapter 2), we note that the CIs' role as a facilitator of ongoing structural change in the economy and the broader society would be quite different from their role in preserving cultural heritage.

6.2 Mapping of CI policies across Europe

Creative industries have developed into a very dynamic policy field with a large number of players and activities at different governance levels. The purpose of this section is to present information on the ongoing support activities at national level throughout the European Union. This report does not address activities at regional and community level. The empirical base for the subsequent analysis is a survey among European institutions supporting creative industries. The survey aimed mainly at the inclusion of ministries involved in shaping and implementing creative industry policies.² Overall 32 ministries completed the survey, which constitutes a fairly good representation of the national policy level, but not a complete picture. Additionally 17 agencies and organisations involved in supporting the CI returned a questionnaire, which completed the overall pictures but does not allow for specific analysis of this group of actors.

Based on the survey of creative industries support initiatives, section 6.2.1 highlights the use and the content of the creative industries concepts across the EU-27 by studying the industries supported under this heading. This is complemented by an analysis of the objectives that motivate policy initiatives and actions (section 6.2.2). Section 6.2.3 sheds some light on the governance structures and the use of support instruments at national level.

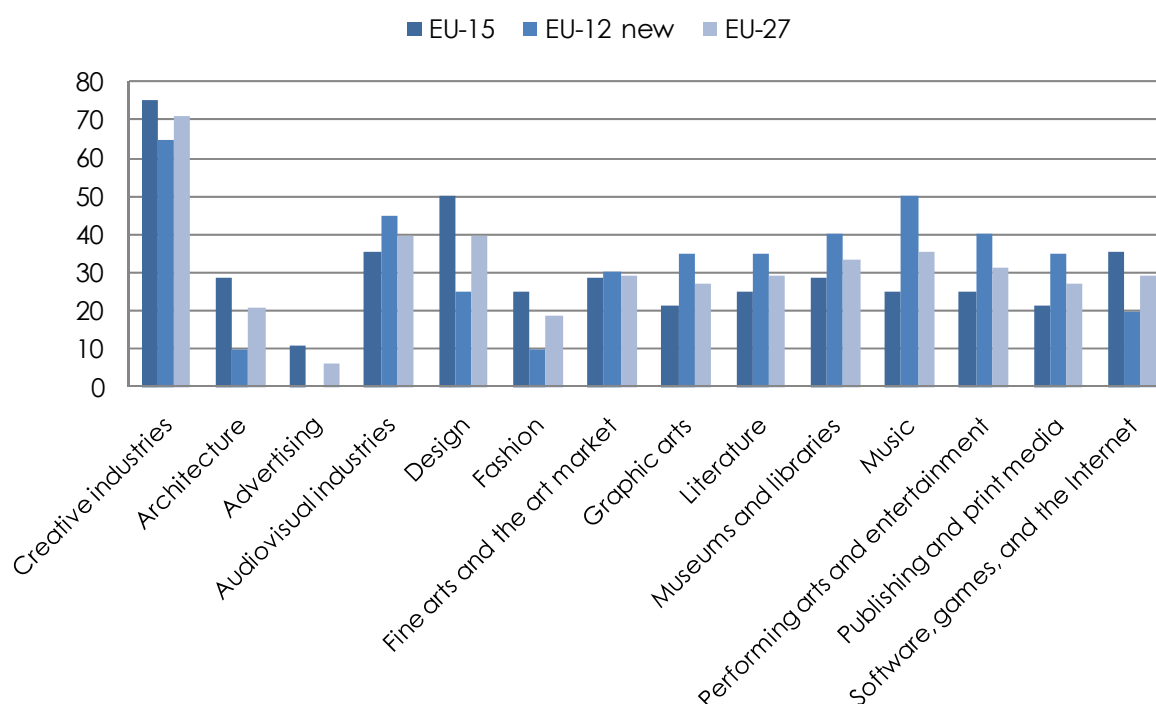
6.2.1 The use of the creative industries concept and the sectors included

One of the outstanding features of the creative industry concept is its ability to evoke a spontaneous understanding of the matter by almost all observers and even vaguely interested people. The term creative industries plus a few key words like design, music, and film, seems to offer sufficient connotations to 'exhaustively' define the sector while in reality the borders are quite blurred. Evans' (2009) efforts to present a pan-European overview of studies in this field illustrate the 'babylonian' confusion about the boundaries of creative industries. For each cited study – and there are many – Evans had to present not just the results but also the definitions used to be in a position to assess the results. For this reason estimates of the levels – i.e. the size of creative industries – or the development paths of the CIs are barely comparable across (country) studies. There are almost as many definitions of the CIs as there are studies.

The survey revealed that about 70 per cent of the responding institutions from the EU-27 aim at policy formulation and implementation in the area of creative industries, though the definition or industry coverage proved far from being uniform (Figure 6.1). The audiovisual sector, design and music are in the portfolio of about 40 per cent of the responding institutions. Architecture, fashion and advertising get only half as much attention, while the other industries and areas are somewhere in-between. The evidence from the survey suggests a very broad interpretation of the CI definition at least at the EU-27 level.

² See Leoon Consulting (2011) for details on the survey design.

Figure 6.1: Use of the Creative industries concept and industries included in per cent of answering institutions

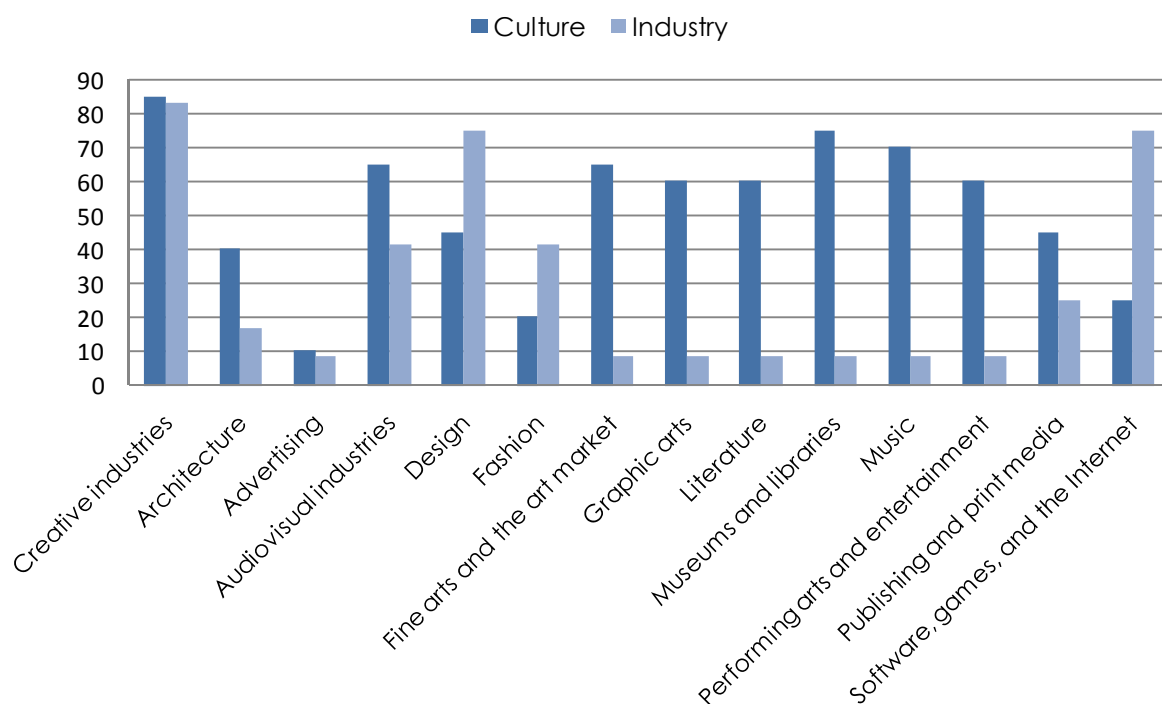


Source: Leon Consulting (2011)

The differences between old and new members are quite distinct in some industries: old Member States have a stronger focus on architecture, design, software and fashion, while new Member States reveal more activities in the traditional cultural industries, such as graphic arts, literature, museums and libraries, music, performing arts, publishing and printing. A strong interpretation of these results would deduce a quite distinct focus on cultural industries in new Member States while old Member States put more attention to the market oriented segments of the creative sphere (software, design, and fashion).

In quite a number of Member States the responsibilities for creative industries are shared between the ministries of economics and ministries of culture (Figure 6.2). The ministries of economics focus their policies mainly on ICT related industries (multimedia, software, games) and design. All other areas are still mostly under the auspices of the ministries of culture. The division of competencies would run along the traditional borders of cultural policy and innovation and competitiveness oriented policies which seems quite plausible. Obviously the creative industries approach is widely accepted on both sides of the 'line of demarcation'.

Figure 6.2: Responsibilities of ministries of economy and ministries of culture



Source: Leon Consulting (2011)

6.2.2 Motives for CI policy intervention

Creative industries have been perceived as a vehicle for policy interventions that aims at a broad range of objectives. The survey participants were asked to indicate the importance of 14 objectives for their interventions in the area of creative industries. All but one objective were ranked at least as “important” (Table 6.1). The relatively equal weight of the different motives suggests that interventions in creative industries are seen as an appropriate response to a wide and diverse set of challenges. Creative industries are expected to contribute to the achievement of economic and non-economic goals with a substantial spin towards economic objectives. On top of the ranking of motivations are the support of innovative activities (72 per cent of the respondents claim this motive to be very important), the stimulation of economic growth (63 per cent), and the creation of new jobs (53 per cent). The first non-economic goal – securing cultural diversity – is “very important” for 51 per cent of the respondents and thus about average in this ranking. The least important motive is the replacement of declining industries. Only 14 per cent see this as a “very important” objective, while 36 per cent claim that this is “not important”. This goal may be far more important at the regional or town level than at the national level.

The importance of these objectives underlines the great “hopes” that are related to investments into the area of creative industries. At the same time, however, initiatives to measure the outcome and impact of such policy intervention are still in an infant state, if not below. The questions in the survey on evaluation practices and feedback loops into policy making revealed that only some countries have well-developed structures for reflecting and overhauling CI policies. This does not imply that the effects do not live up to the objectives attached to CI policy making – it simply indicates that many of the activities may not be as evidence based as would be desirable.

Although there are some differences, the structure of objectives is not too different between ministries of culture and ministries of economics. The major difference between the two

groups is to be found in the following objectives: Securing cultural diversity, improving the quality of life, and increasing the attractiveness of the country for tourists. These issues rank higher on the agendas of ministries of culture.

*Table 6.1: Main motives for CI-intervention
in per cent*

	Very important	Important	Not important	Rating ^{a)}	Responses
Supporting innovative activities	71.8	28.2	0.0	1.7	39
Encouraging economic growth	62.5	35.0	2.5	1.6	40
Creating new jobs	52.5	45.0	2.5	1.5	40
Increased international visibility of national products and services	54.1	37.8	8.1	1.5	37
Improving networking within the industry	47.4	50.0	2.6	1.5	38
Attracting creative professionals	45.9	48.6	5.4	1.4	37
Securing cultural diversity	51.3	30.8	17.9	1.3	39
Increasing the attractiveness of the country for tourists	48.6	34.3	17.1	1.3	35
Stimulating innovation in downstream industries	35.1	54.1	10.8	1.2	37
Improving the quality of live	39.5	44.7	15.8	1.2	38
Internationalisation of firms	35.1	43.2	21.6	1.1	37
Promoting start-up activities	34.2	44.7	21.1	1.1	38
Improving the attractiveness of the business location	21.6	62.2	16.2	1.1	37
Replacing declining industries	13.9	50.0	36.1	0.8	36

Note: ^{a)} The numbers give the average score of answers; "very important" received two points, "important" received one point and "not important" received zero points.

Source: Leoon Consulting (2011)

6.2.3 Instruments of intervention

Table 6.2 shows how different the instruments, strategies and priorities with respect to CI-intervention actually are across EU Member States. The 13 interventions suggested in the survey address issues in networking, financial support, skills training, provision of services and provision of infrastructure.

*Table 6.2: CI-policy instruments at the national level
in per cent*

	EU-15	EU-12 new	EU-27
Networking events	57	70	63
Grants	39	60	48
Management training	36	55	44
Cluster support	25	40	31
Marketing and PR support	21	40	29
Access to external capital	25	25	25
IPR support	18	35	25
Business consultancy	18	30	23
Access to public institutions as potential clients	18	30	23
Loans	14	20	17
Office resources	11	20	15
Voucher schemes	4	5	4
Insurance	4	0	2

Source: Leoon Consulting.

Networking events are the most preferred mean of intervention in the landscape of Europe's creative economy. 70 per cent of the new Member States (EU-12) claim to use networking

events in order to support the players of the creative sector. With an approval rate of 57 per cent, networking events are also the most popular means of intervention in the EU-15 states. The boundaries of networking events are certainly fuzzy; they may cover the organization of conferences and workshops, the launching and maintenance of websites, the building of communities, awareness raising and much else besides. We reason that the seemingly broad support of networking instruments among European policy makers mainly points at the introduction of a number of generic policy measures which do have networking components to stimulate interaction within the CIs. The number of initiatives which aim at networking as such is supposedly much smaller. In other words, networking activities seem to be low-key activities in most countries where no explicit networking measures were observed.

Grants as a means of intervention rank number two in popularity (approved by 48 per cent of the survey participants), followed by the provision of management training (44 per cent).

There are some notable differences between the new Member States and the EU-15 with regard to the use of some instruments: Marketing and PR support bears almost twice as much relevance in the EU-12 states as compared to the EU-15. The same is true for IPR support – 35 per cent of the support institutions in the new Member States offer IPR support, whereas only 18 per cent in the EU-15 put a focus on this aspect. In general, the 12 new Member States rank each single intervention category relatively higher than the EU-15 members, except for insurance and access to external capital.

6.3 Concluding policy recommendations

Policy making in the fields of creative industries meets with several challenges. In the first place the CIs constitute the archetype of a cross-sectoral policy field. Apart from cultural and economic policies (including established sub-fields such as competition, industry, enterprises, and SMEs), they span regional policy, technology and innovation policy, employment and social affairs, education, and the information society. While far from complete, this list indicates that CI policies exhibit significant overlaps with other policy areas. In designing and implementing a coherent CI policy agenda, recognising these inter-linkages and creating interfaces among the various fields of action is of the utmost importance. Setting proper framework conditions is certainly a good place to start.

Secondly, designing CI policy measures fluctuates between the creation of new sector-specific instruments and the absorption of CIs into already existing support measures. Before reinventing the wheel once more, it seems wise to screen the usefulness and applicability of existing measures and consider their redesign when indicated. For instance, many of the challenges the CIs face are the same as those of service firms, simply because most CI firms are affiliated to the service sector. Similarly, many CIs face the same structural barriers to growth and innovation as SMEs, simply because most CI firm operate on a (very) small scale. Promoting the competitiveness and innovation performance of the CIs should be integrated into generic support structures for service firms, SMEs, and non-technical innovation whenever possible.

At the same time the subsectors of the CIs are quite heterogeneous with respect to their business models, organisational modes, cooperation structures, and economic performance. There is no policy that fits all of them. If one acknowledges (sub-) sectoral specificities, differences with respect to the targeted size of the firms, or even differences with respect to the characteristics and types of CI entrepreneurs, one arrives at quite different conclusions for policy support, support structures, and policy initiatives.

The diversity among the CIs is a strong recommendation for aligning specific policies to local or regional circumstances. On the other hand, supportive horizontal policies are no less key and call for policy intervention at a national, or even supra-national, level.

The Lisbon Treaty (2009) governs the allocation and exercise of competencies among the different vertical levels of European governance along the principles of conferral, subsidiarity, and proportionality. These are to ensure that interventions are taken as closely as possible to the citizens. Competencies are delegated to higher levels of governance only to the extent that lower levels cannot come up with sustainable solutions for the problem at hand.

The EU enjoys very few exclusive competencies. The EU's exclusive mandate is to legislate in the areas of international trade and customs and in setting the (competition) rules that shape the internal market. This is being both stressed and challenged, for instance, by the emergence of China as a powerful exporter of CI products and the globalising market power of some strong players providing ICT products.

Single market policies constitute a powerful tool for:

- supporting the mobility of the creative class across Europe,
- enforcing the implementation of the Service Directive and thereby dismantling discrete barriers to creative entrepreneurship in Europe,
- establishing "a true single market for online content and services (borderless and safe EU web services and digital content markets), with high levels of trust and confidence, a balanced regulatory framework governing the management of intellectual property rights, measures to facilitate cross-border online content services, the fostering of multi-territorial licences, adequate protection and remuneration for rights holders, and active support for the digitisation of Europe's rich cultural heritage" (EC, 2010, p.8).
- promoting standardisation, which increases market size through complementarities and provides economies of scale on the producer side, as well as network externalities on the consumer side. To that effect standardisation may promote dynamic aspects of competition and thereby cause momentum. At the same time, consumers have a vital interest in maintaining the "infinite variety of CI products" and related infrastructures. This especially concerns cases where an old (technological) infrastructure is preserved, although a superior one exists.

The EU may support, coordinate, or supplement actions of the Member States in (CI-relevant) areas such as industry (including innovation), culture, tourism, and education. For the most part, policy intervention that targets the promotion of industries "at the crossroads of arts, culture, business, and technology" falls into this category.

The empirical results derived in this study encourage supportive action of the EU mainly with respect to agenda setting. In the first place we argue that the failure to come up with an unequivocal sectoral labelling system makes a substantial contribution to the lack of appropriate CI policy agendas at the national or regional level. The lack of a common (statistical) concept of the CIs is directly related to the poor database, which severely affects evidence-based policy making. Economic insight based on hard facts is of key importance, and the gathering thereof alone establishes an important role for policy. The UK provides a good example of how the strong conceptual foundation of a policy field is accompanied by the availability of data which is then exploited for (re-)drafting policies. The dearth of systematic analysis and evaluation – in particular related to the additionality of interventions – is especially damaging when policy makers expect so many different things of the creative industries. The EU should take on a coordinating role to further develop and integrate expert

knowledge on the common, as well as the distinct, patterns among the CIs. It is believed that this type of support – in essence, policy learning – would generate real value added in the shaping of policy measures at the national, regional, and local levels.

Finally, this report extensively argues that the CIs develop mainly within the context of knowledge-driven economies. The knowledge-driven approach gains in importance as countries draw near the technological frontier and are forced to invest strongly in their own technology development to further improve their competitive position. At the same time, knowledge diffusion is an important instrument in catching-up strategies. Both arguments emphasise that the Cohesion Policy of the European Union should pay closer attention to the economic and innovation potential of the creative industries.

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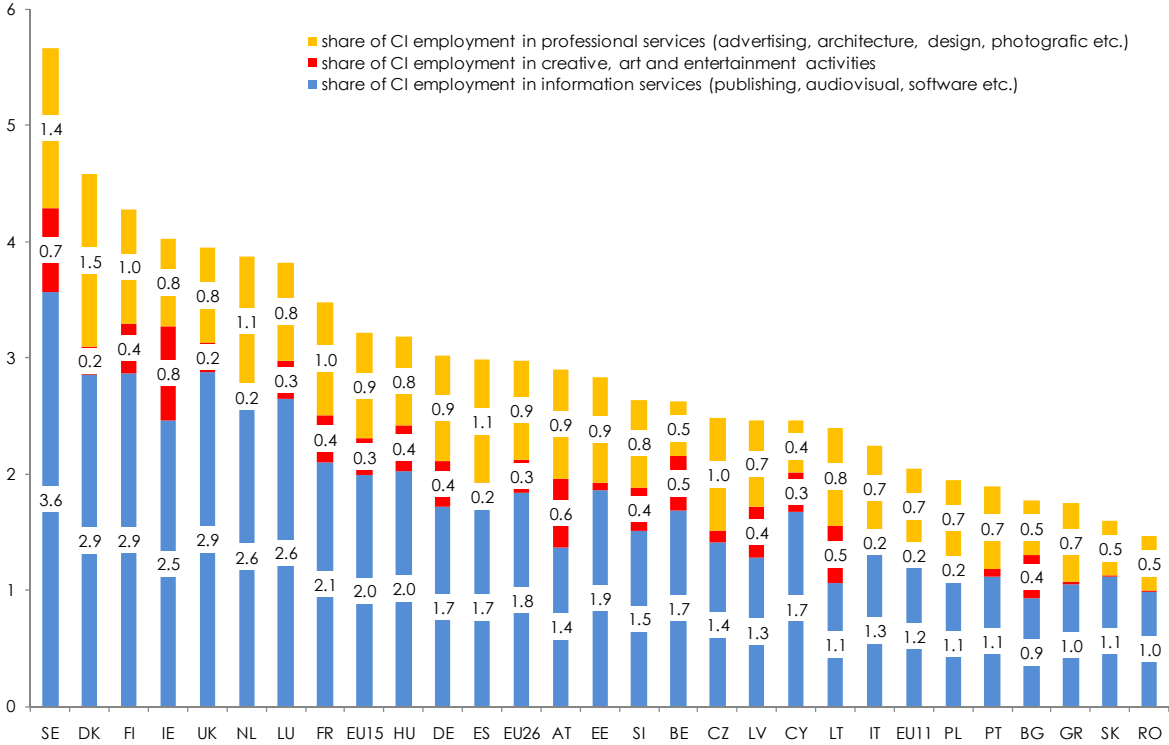
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Appendix

Figure A.1: Employment share of the creative industries, 2008
in per cent



Notes: EU-26 (EU-11) refers to EU-27 (EU-12) excluding Malta; industrial classification is based on NACE Rev. 2 (see Table 2.2).

Source: Structural Business Statistics (SBS), EU Labour Force Survey (LFS) for NACE Rev. 2 section R. and AMADEUS database - WIFO calculations.

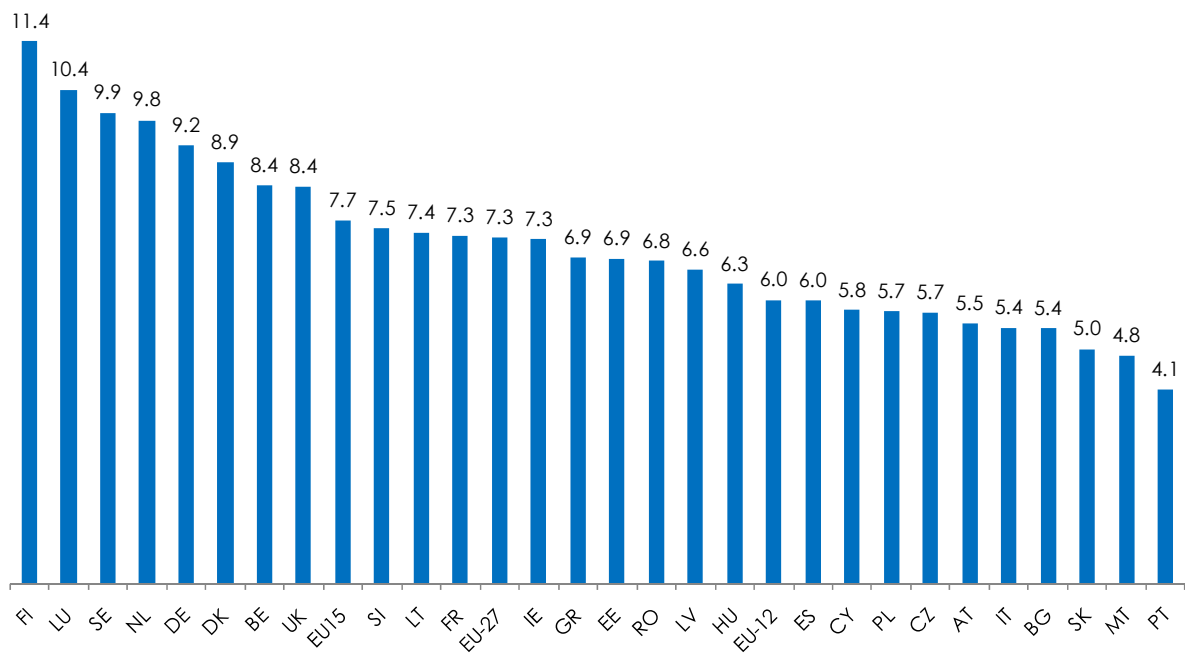
Table A.1: Evolution of the employment share of the creative industries, 1999-2007
in per cent

	1999	2000	2001	2002	2003	2004	2005	2006	2007	Change '99-'07
Sweden	4.62	5.06	5.34	5.35	5.03	4.96	5.04	5.23	5.43	0.81
Netherlands	3.76	3.98	4.12	4.00	3.93	3.96	4.16	4.18	4.17	0.41
Denmark	3.24	3.42	3.50	3.53	3.43	3.31	3.32	3.43	3.51	0.28
Ireland	3.10	2.90	3.09	3.24	3.08	3.26	3.16	3.35	3.35	0.25
United Kingdom	2.68	2.84	3.13	3.09	3.20	3.21	3.17	3.17	3.28	0.60
Finland	2.74	2.97	3.08	3.14	3.00	2.98	3.05	3.15	3.16	0.42
Spain	2.81	2.97	3.09	2.94	2.92	2.92	3.01	3.11	3.31	0.50
Austria	2.34	2.53	2.63	2.71	2.74	2.75	2.77	2.85	2.88	0.54
Germany	2.48	2.68	2.86	2.86	2.81	2.74	2.76	2.78	2.83	0.35
Czech Republic	1.93	2.05	2.14	2.51	2.29	2.36	2.45	2.63	2.70	0.77
Luxembourg	2.38	2.53	2.67	2.54	2.50	2.43	2.53	2.59	2.66	0.27
Belgium	2.30	2.44	2.45	2.43	2.41	2.46	2.50	2.53	2.57	0.27
Estonia	1.56	1.60	1.66	1.83	2.16	2.27	2.31	2.50	2.61	1.06
France	2.52	2.62	2.64	2.62	2.58	2.58	2.55	2.48	2.77	0.25
Hungary	1.63	1.84	2.04	2.15	2.10	2.05	2.11	2.25	2.36	0.74
Italy	1.79	1.89	2.04	2.08	2.04	2.07	2.11	2.13	2.18	0.38
Latvia	1.43	1.52	1.59	1.71	1.86	2.07	2.02	1.94	2.14	0.71
Poland	1.48	1.55	1.63	1.73	1.80	1.85	1.83	1.94	1.96	0.48
Portugal	1.27	1.31	1.27	1.13	1.16	1.72	1.82	1.91	1.95	0.69
Slovenia	1.43	1.49	1.57	1.58	1.62	1.63	1.74	1.85	1.93	0.50
Greece	1.72	1.69	1.72	1.77	1.74	1.81	1.78	1.84	1.91	0.19
Slovakia	1.41	1.50	1.43	1.51	1.70	1.68	2.09	1.78	2.14	0.73
Lithuania	1.18	1.19	1.28	1.35	1.46	1.51	1.59	1.77	1.78	0.60
Cyprus	1.90	1.88	1.89	1.88	1.82	1.78	1.77	1.76	1.70	-0.20
Malta	n.a.	1.33	1.61	1.50	1.48	1.45	1.41	1.38	1.33	n.a.
Bulgaria	0.81	0.88	0.94	0.96	1.14	1.20	1.24	1.32	1.41	0.59
Romania	0.56	0.53	0.52	0.59	0.66	0.78	0.91	1.05	1.19	0.63
EU-27	2.26	2.40	2.54	2.55	2.54	2.56	2.59	2.64	2.74	0.48
EU-15	2.53	2.69	2.83	2.81	2.78	2.79	2.81	2.84	2.96	0.42
coefficient of variation	0.436	0.452	0.453	0.440	0.404	0.378	0.369	0.369	0.360	

Note: Industrial classification is based on NACE Rev. 1.1 (see Table 2.1).

Source: Structural Business Statistics (SBS); refer also to the Technical Appendix – WIFO calculations

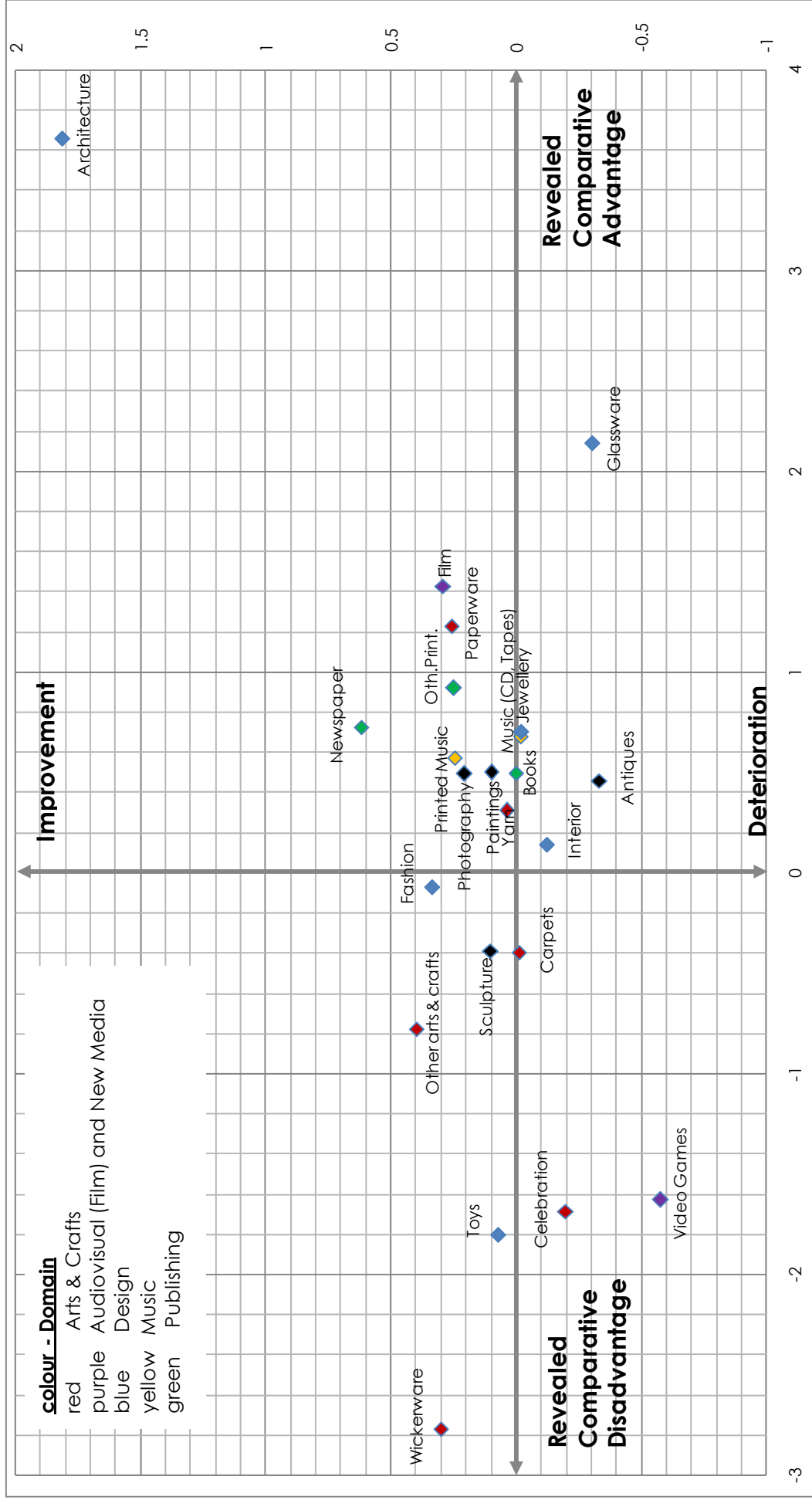
Figure A.2: Core creative class employment, 2008
in per cent



Notes: The creative class is defined as explained in Table 2.3 (lower panel), but excludes teaching professionals.

Source: EU Labour Force Survey - WIFO calculations.

Figure A.3: Extra-EU-27 Revealed Comparative Advantage 2008 and change therein since 2002



Source: UNCTAD Global Databank on world trade in creative products – WIFO calculations.

Table A.2: Importance of design sector for other industries, 2005 - 2006

NACE Rev. 1.1	Description	Weighted Number of firms	Percentage of firms that...	
			used industrial design registrations	made changes in the design of goods and services
15	Food and beverages	18,383	3.7	18
16	Tobacco products	78	5.0	21
17	Textiles	5,179	1.7	11
18	Wearing apparel; dressing and dyeing of fur	9,639	1.2	8
19	Leather, fur and footwear	3,707	3.2	7
20	Wood, products of wood and cork	8,570	1.0	6
21	Pulp, paper and paper products	2,093	3.6	9
22	Publishing, printing and reproduction	6,982	1.9	16
23	Chemicals and chemical products	78	11.4	14
24	Coke, petrol., nuc.fuel	3,712	5.9	25
25	Rubber and plastic products	6,212	5.2	10
26	Other non-metallic mineral products	7,756	3.1	11
27	Basic metals	1,745	4.1	11
28	Fabricated metal products	19,959	3.0	8
29	Machinery and equipment n. e. c.	10,057	5.0	11
30	Office machinery and computers	293	3.6	11
31	Electrical machinery and apparatus n. e. c.	3,618	4.2	10
32	Radio, TV and communication equipment	1,234	4.5	14
33	Med., precision and opt. instr., watches and clocks	2,193	5.4	15
34	Motor vehicles, trailers and semi-trailers	2,381	5.1	13
35	Other transport equipment	1,672	2.8	7
36	Furniture; manufacturing n. e. c.	9,310	3.8	12
37	Recycling	655	0.4	2
45	Construction	58,304	1.4	3
50	Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	8,507	0.4	8
51	Wholesale trade and com. trade, exc. motor veh.	57,531	1.8	10
52	Retail trade, exc. motor veh. + cyc.; repair	14,308	2.1	7
55	Hotels and Restaurants	13,857	1.0	7
60	Land transport; transport via pipelines	19,623	0.5	3
61	Water transport	808	3.7	1
62	Air transport	264	3.9	15
63	Sup. + aux. transport act.; travel agencies	8,080	0.8	5
64	Post and telecommunications	2,498	2.3	10
65	Financial intermediation, exc. Insur. + pension funding	2,821	1.0	20
66	Insurance + pension fund. exc. compulsory soc. sec.	915	3.9	19
67	Activities auxiliary to financial intermediation	1,981	1.4	2
70	Real estate activities	3,912	3.7	4
71	Renting of machinery and equipment without operator and of personal and household goods	1,174	0.8	12
72	Computer and related activities	8,370	3.3	18
73	Research and development	942	6.9	15
74	Other business activities	30,195	1.5	9
92	Recreational, cultural and sporting activities	2,360	3.4	63

Source: Community Innovation survey 2006, WIFO calculations at the Eurostat Safe Center in Luxembourg.

Technical Appendix

The Technical Appendix details some of the data issues that seemed too complex to handle them in a footnote. The main data source for chapter 3 of the report is Eurostat's Structural Business Statistics (SBS) which can be downloaded from the following website.

http://epp.eurostat.ec.europa.eu/portal/page/portal/european_business/data/database.

Table T.A.1 gives an overview of the relevant variables.

Table T.A.1: Overview of the used variables and their sources

	Item	Number of firms
First-best variable (from SBS)	Employment V16910: Number of persons employed in the population of active enterprises in t	V11910: Population of active enterprises in t
Second-best variable (from SBS)	V16110: Number of persons employed	V11110: Number of enterprises
Third-best datasources	EUKLEMS (GR, IE, BE, PL) OECD SBS (PL) New Cronos National Accounts (EE)	Not necessary

In a number of cases it was necessary to cross-check employment data at the 3- or 4-digit level of industries with employment register data from national statistical offices.

In accordance with the DCMS measurement framework, we extracted data for a number of sub-sectors, some of which enter the sample with a weight smaller than one (Table T.A.2). Our analysis does not cover the Arts and Antiques market, however.¹

Table T.A.2: Weights used for sub industries of the CIs

Sector	Weight
db177	0.005
db181	0.005
db182	0.005
db183	0.005
dc193	0.005
de221	1.000
de223	0.250
k722	1.000
k742	0.250
k744	1.000
k7487	0.025
k7481	0.250
o92	Country-specific weights, see below

Source: Wilkinson (2007, p. 33).

The resulting database suffers from a number of shortcomings, namely

- gaps, especially where smaller sectors are concerned such as NACE Rev. 1.1 74.81, and 74.87,
- missing data on NACE Rev. 1.1 sector 92 for Belgium, Greece, Ireland, Malta and Poland, and
- a too coarse level of aggregation: data for NACE Rev. 1.1 sector 92 is only available at the two digit level, but the measurement framework relies on three and four digit sub industries of sector 92.

¹ The DCMS framework captures Art & Antiques by 5 per cent of the economic activity in NACE Rev. 1.1 sectors 52.48 and 52.5 – see Table 2.1.

If there were missing data entries for only one or two years, we applied linear interpolation to obtain the values in between. In case of larger gaps, or when data for the first year (1999), or for the last year (2007) was missing, then the first-best approach was to calculate growth rates based on additional data (Table T.A.1) and to use these for extrapolating the respective time series. Alternatively, if nothing else worked out, we just applied the growth rates of the corresponding series at the next higher level of sectoral aggregation.²

A number of 3-digit and 4-digit industries in recreational, cultural and sporting activities (NACE Rev. 1.1. sector 92) do not qualify as creative industries. We used the Amadeus database to calculate country-specific weights for CI-employment in sector 92: for each country we first multiplied employment in sector 92.34 (other entertainment activities, not elsewhere classified) and in sector 92.72 (other recreational activities, n.e.c.) by 0.5 and 0.25. These subsectors comprise a diverse set of activities and it is reasonable to assume that not all of them qualify as creative industries activities (see DCMS, 2001). We added the sum of the adjusted employment figures in 92.34 and 92.72 to employment in the other relevant CI subsectors, viz. 92.1 (Motion picture and video activities), 92.2 (Radio and television activities), 92.31 (Artistic and literary creation and interpretation), 92.32 (Operation of arts facilities) and 92.4 (News agency activities). The resulting sum is divided by total employment in sector 92. This share gives the employment weighting factor for NACE Rev. sector 92 (Table T.A.3).

Table T.A.3: CI employment weights for NACE Rev. 1.1 sector 92

Country	Weight
AT	0.495
BE	0.873
BG	0.511
CY	0.300
CZ	0.231
DE	0.570
DK	0.566
EE	0.315
ES	0.649
FI	0.708
FR	0.678
GR	0.664
HU	0.591
IE	0.530
IT	0.658
LT	0.458
LU	0.300
LV	0.316
MT	0.300
NL	0.773
PL	0.629
PT	0.571
RO	0.386
SE	0.550
SI	0.172
SK	0.144
UK	0.335

Source: Amadeus database; reporting year: 2006 – WIFO calculations.

² This approach was also followed for NACE Rev. 1.1 sector 72.2 (Software consultancy and supply) in the Netherlands. Due to some reclassification of economic activity there is a structural break in the data between the reporting years 2003 and 2004. Data for 2003 and earlier are obtained by using annual growth rates of the aggregate series (72.1+72.2).