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# Linking the Creative Economy with Universities' Entrepreneurship: A Spillover Approach

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**Abstract:** In recent years the importance of the creative economy has also characterised the international higher-education sector through specialised education, research and entrepreneurship. In this paper I apply and discuss the concept of spillovers as a relevant theoretical framework to understand and foster the value generated by university programs in the creative economy. After introducing the main concepts of spillovers in relation to innovation and growth, I discuss the recent developments in the research on spillovers applied to the arts, culture, and creativity. Through a contextualised model of academic creative economy, the analysis is combined with that on knowledge spillovers in higher education and universities' third mission, to fill a research gap that still exists in creative economy programs and their potential to generate creative spillovers. The study further integrates some more recent literature on university spillovers, which can provide useful methodological suggestions especially oriented toward internalising and enabling positive creative spillovers, in particular in an urban context.

**Keywords:** creative spillovers; universities' mission and entrepreneurship; creative economy; knowledge spillovers



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## 1. Introduction

In recent years, creativity has risen in the list of skills needed for the future that the World Economic Forum publishes periodically: from 10th place in 2015 to third place in 2020. Correspondingly, higher education and research programs dedicated to the creative economy are developing in number, quality, and variety worldwide. With different aims and approaches and within different contexts, they range from more traditional arts and cultural management, economics, and policy to embracing entrepreneurship, innovation, creativity, design, and applied technology. If we look at Times's 2020 world general ranking, just among the top 100 universities worldwide, more than 10 universities have developed education programs, research centres, or spinoffs specialised in the creative economy. This proportion doubles when we consider the same rankings for the top 100 universities in the arts and humanities or in business and economics. The popularity of creative economy in higher education institutions (HEIs) is not exclusive to the richest or most industrialised countries, as more emerging countries are getting involved in it (e.g., [1]). Similarly, positive figures account for the volume trends of research output on the creative economy, such as the growing number of publications in major generalist international peer reviewed journals, or the growing number of specialist peer reviewed journals. In the end, for its interdisciplinarity, the academic creative economy can spill over onto the university territorial context by means of increasingly dedicated forms of university entrepreneurship or the third mission (TM), contributing to regional socio-economic and cultural development, substantial and specialised skills and employment, technology transfer, competitiveness, and smart specialisation, where these forms can be more or less formalised and structured, as so far few studied examples indicate. This is the case, for instance, of cooperation activities between HEIs and the arts, culture and creative industries CCIs in Southern Norway [2], the Wuxi National Creative Industry Park in China [3], or

the Creative Industries Pole of Science and Technology Park in Oporto, Portugal [4]. There is a growing interest worldwide to study the impact of the capacity of the creative economy within and outside the academic realm to contribute more understanding about the role of the CCIs in economic development, regeneration, and social inclusion, which still lacks substantial evidence [5].

The overall mission of creative-economy specialised academic programs is to train in, research, exchange, and foster the value generated by the CCIs and their institutions. The variety of these programs depends on a diversity of institutional contexts, history, local-to-international opportunities, and needs, to which universities have responded more or less strategically or serendipitously. The academic capacity developed in an interdisciplinary field such as the creative economy can constitute a unique asset engendering—at least in the medium term—a strategic advantage for the involved university. Such capacity typically spills over to the community of the university's stakeholders. The development of higher education, research, and entrepreneurship in the creative economy can contribute to a better outreach by universities and cooperation with creative institutions and organisations. In particular, specialised studies such as arts entrepreneurship originate from arts professionals' idiosyncrasies and needs [6] that are acknowledged and tailored by higher education institutions specialised in the arts [7]. More in general, education in the creative economy copes with knowledge and learning, which are increasingly based on cultural innovation [8]. On the other hand, academic specialisation could also bear possible inefficiency risks and challenges, such as a mismatch between educational supply and industry demand [9], and trade-offs between a minimum internal critical mass versus external cooperation [10,11].

In this paper I apply and discuss the concept of spillovers as a relevant theoretical framework to better understand and foster the value generated by university programs in the creative economy. In particular, a spillover approach is especially useful in disentangling and enabling the positive effects of the arts and culture because it complements direct effects with indirect effects that society would not, in general, fully acknowledge or voluntarily be disposed to pay for. Furthermore, a spillover approach highlights extra-industry effects—that is, effects that occur also outside and beyond the sector of the arts and culture. Therefore, this approach can further contribute to identifying and leveraging the impact of universities' activities [12] in the context of arts academic programs. In addition, as far as what concerns the university TM, it can better comprehend not only its business viability, but also its social impact.

A spillover approach can address the issue of defining, measuring, fostering, and capturing the overall value that art, culture, and creativity generate in the economy and the society. A similar issue exists in university programs and research activities dedicated to the creative economy, aiming to disentangle its value and to enable and support the industry and its players to generate this value [13]. It can be expected that challenges are relatively higher than in more technology- or business-oriented academic research activities and programs. In fact, typical forms of academic entrepreneurship, such as consulting, spinoffs creation and especially patenting and licensing [14], are relatively less viable in the arts and culture than in the case of other traditionally more for-profit-oriented industries (see, e.g., [15]), due to a more intangible nature of cultural outputs. Therefore, a spillover-based approach allows for the widening of the value generated through university entrepreneurship in the sense of direct academic research commercialisation [16] to include also social and indirect effects and in a more dynamic perspective. Finally, the spillovers generated by creative economy academic programs are culturally idiosyncratic, and add to universities' more general knowledge spillovers [17].

In the next section I introduce the concept and main theoretical elements of externalities and spillovers in relation to innovation and growth, and some applications. In Section 3 I discuss recent developments of research on spillovers applied to the arts, culture, and creativity, where analysis is shifting toward the enabling of creative spillovers. In Section 4 I conjoin the analysis with the literature on knowledge spillovers in higher education and

its TM and its policy rationale, to then focus on the context of the creative economy and its challenges. The last section concludes the paper.

## 2. Innovation, Growth, Externalities, and Spillovers

The concept of externalities and spillover effects are quite important in economics and go back to Marshall, Pigou and Sidgwick. An externality occurs when the production or consumption activity of a subject influences, negatively or positively, the wellbeing of another subject, without those who have suffered such consequences receiving compensation (in the case of a negative impact) or paying a price (in the case of a positive impact) equal to the cost or benefit borne or received. As neither benefit nor cost is passed to the producer or the consumer, this causes either an underconsumption/underproduction (negative spillovers) or overconsumption/overproduction (positive spillovers), representing a loss to society and a market failure. By definition, positive and negative spillovers are unplanned or unintentional and imply a different purpose. Spillovers can be internalised by government intervention (by means of taxes and subsidies), but also through price adjustments, reducing or eliminating externalities, while spillovers are still present.

Spillovers play an important role in economics in explaining agglomeration of industries, innovation in networks, and growth. By clustering with similar firms, a company can take advantage of a number of potential knowledge spillovers, such as the division of labour, or the exchanges of input (logistical spillovers), expertise (easier access to a labour market that is also more dynamic), or information (i.e., more innovative) [18–21]. Noticeably, when these effects occur between firms of a same industry, they make the case for specialisation in agglomeration. To this respect, a monopoly is seen as optimal, because it lessens externalities, for instance by way of espionage, imitation, etc. Since a monopoly allows spillovers to be internalised by the innovator, in theory innovation and growth should increase—that is, it pays to invest in innovation. A rather different perspective was offered by Porter [22], according to whom it is competition instead that drives innovation, and innovation is necessary to remain competitive. Jacobs [23,24] was also supportive of competition, and considered clustering important in that it facilitates the exchange of ideas between different industries. In her view, knowledge spillovers build on diversity, and the geographical proximity of different industries would facilitate an exchange of ideas from very different perspectives, driven by competition. Greater diversity would thus promote innovation [21,25].

Network spillovers play an essential role when a new product is introduced in a market. In many cases (e.g., in consumer technology), the installed base is a major factor of market success, in terms of benefits for the buyer. In the CCIs a notable example is provided by Philips's Digital Compact Cassette versus Sony's MiniDisc when speaking in terms of competing products, or Compact Cassette in more classical terms, considered as an unauthorised copying of music from LPs. These installed-base effects are known as network spillovers. They can therefore hinder adoption of new products and technologies that are incompatible with the installed base [26].

Krugman's rapidly developing field of New Economic Geography [27] saw a strong resurgence of interest in the working principles of agglomeration. Glaeser et al. [21] also used a number of case studies to determine which spillover theory best fit the observed data. Even though many cities are specialised in only a few industries, they argue that this is the result of other spillovers. The relevance of such research has been underscored by the conclusion that in both Europe and the US, in spite of the decrease in transport costs for goods, people and ideas, innovation and agglomeration are closely linked [25,28–30]. Needless to say, this debate continues to the present day, and outcomes differ (see, e.g., [31–33]).

The problems that arise are similar to those that come up in defining and quantifying potential spillovers originating in the CCI sectors. The number and distribution of patents is one measure that is proposed, although it is admitted that it may be an unreliable proxy [34,35]. Capturing spillovers is necessary not only in studying the relation between clustering and innovation, but also in other fields, such as in finance—e.g., volatility

effects in financial markets [36], health—e.g., the effects of insurance subsidies [37], (local) economic development projects—e.g., traffic congestion [38], and urban regeneration and the arts [39]—e.g., spatial spillovers in public subsidies for the arts [40].

### 3. Cultural and Creative Spillovers

A variety of cultural goods are often assimilated to public goods, which, for their non-excludability and non-rivalry properties, include externalities. With the changing role of culture and the rise of the creative sector, the CCIs have increasingly become part of policies aimed at improving wellbeing, helping economic growth and employment, urban regeneration, and other societal issues. This has spurred research into the empirical aspects of spillovers in the CCIs.

Through an input–output approach, Bakhshi et al. [41] applied knowledge spillovers to the CCIs. In particular, they focused on supply chain linkages and business-to-business transactions in order to provide a possible—though partial—measurement of the possible knowledge transfer effects from the CCIs to innovation in other sectors. Although the study did not produce empirically significant results, the chosen approach raised the possibility of creative spillovers. By analysing wage differentials of creative and other workers in creative clusters, Bakhshi et al. [42] found a wage premium of creative workers, which they explained as the presence of knowledge spillovers from the CCIs to other sectors.

Sacco [43] applied the conceptual framework of cultural spillovers to active cultural participation and the access of individuals. He contextualised cultural spillovers through eight main dimensions: innovation, cultural welfare (cultural participation and wellbeing), (social) sustainability, social cohesion, new entrepreneurial models, lifelong learning, soft power, and local identity. Most of these dimensions have a distinct social connotation and direct links with the academic environment. In particular, innovation is not simply the generation of new ideas, but is socially transmitted and implies cooperation; new entrepreneurial models can improve the employability of graduates from the humanities; social cohesion can foster pro-social vocational orientation, with direct implications; and lifelong learning is not the explicit prerogative of universities. Overall, the social component characterises the system-wide cultural districts (SWCD), where network spillovers of creative practices take place in strategically complementary value chains [44,45].

In 2015 the British Tom Fleming Creative Consultancy (TFCC), commissioned by some agencies and think tanks in Europe, published the report “Cultural and creative spillovers in Europe” [46]. This policy initiative aimed to fill the research gap in terms of understanding, management, design, exploitation, stimulation, and assessment of these spillovers. Cultural and creative spillovers are defined as the indirect and overall effects, positive as well as negative, that spill over from the cultural and creative sector into other economy and societal sectors. Hence their importance in contributing to the articulation of the whole value contributed by the arts and culture. The TFCC Report [46] constitutes a first attempt to provide an overview of the existing literature that, amid a variety of aims, methodological approaches, and applied creative subsectors, more or less explicitly addresses cultural and creative spillovers. In fact, not all the studies considered in the report refer to “spillovers” as such, rather employing other similar wordings such as “contingent impact,” “contextual benefits,” “side effects,” “feedback loops,” “socio-economic impact,” “interactions,” “transfers,” “benefits,” and “crossovers.” The report distinguishes and defines three categories of creative spillovers: (a) knowledge spillovers (new ideas, innovations, and processes developed within creative businesses that spill over into the wider economy and society without directly rewarding), (b) industry spillovers (vertical value chain and horizontal cross-sector benefits to the economy and society in terms of productivity and innovation), and (c) network spillovers (wider positive and negative effects based on the concept of cluster or cultural quarter, such as economic growth, regional attractiveness and identity, and gentrification). Noticeably, the different spillover effects are indicated as more or less tangible, identifiable, and measurable. However, the TFCC Report [46] strove to show research-based evidence of causality effects of spillovers

other than “weaker” effects, such as correlation. The only evidence was provided by Bakshi et al. [47], who focused on the relation between the creative sector and (non-creative) small-medium enterprises (SMEs) (industry spillovers), and by Cuypers et al. [48], who focused on the relation between the arts and culture as a medical therapy improving health and wellbeing (network spillovers). The report concluded that research on creative spillovers is still sparse and casual, and advocated for more qualitative research and an interdisciplinary and holistic approach. It also suggested a series of methods for the sake of causality demonstration, such as in-depth case studies, longitudinal analysis, experimental studies, action, and design-based and proxy research. A more general contribution of the report is to have stimulated specially applied research drawing from the spillover taxonomy contained in the report.

In the economic and management literature, the wording “cultural and/or creative spillovers” is relatively new, although corresponding studies that not only explicitly employ it, but also define, treat, or try to measure these spillovers, are growing, encompassing cultural, economic, and social dimensions. For instance, Sánchez [49] referred to and measured “specific creative externalities”—such as heritage, related variety, and Florida’s 3Ts (technology, talent, and tolerance)—next to more traditional spillovers (urbanisation, localisation, and social and relational capital) to explain the location of creative industries in Spain. Andersson et al. [50] employed a cultural-heritage externality to estimate the impact of culturally classified property on the sale price of neighbouring buildings. Bisin and Zanella [51] adopted a concept of cultural spillovers to explain immigration deterrents of individuals belonging to different ethnic groups. Ethnicity (and religion) was also at the base of D’Acunto et al.’s [52] cultural spillovers that explain the long-term relationship between antisemitism and demand for finance.

Rawley et al. [53] found “creativity spillovers” (in the sense of information and resource spillovers) in the influence exercised by conglomerates on their subsidiaries in the high-end fashion industry (with possible generalisations to other creative industries, such as movies and recorded music). Podestà and Richards [54] built on TFCC’s [46] framework to analyse the embedment of local network spillovers in international network spillovers that transforms a cultural temporary event into a permanent hub. Belitski and Desai [55] employed creativity spillovers to empirically study the direct and indirect impact of creativity through entrepreneurship on economic development in a large panel of European cities. Similar to Audretsch and Keilbach’s [56] “knowledge filter,” they used the concept of a “creative filter,” defined as “a gap between commercialized and uncommercialized creativity” (p. 1356). This filter is due to uncertainty hindering entrepreneurs’ decision-making, which can be reduced by creativity spillovers.

In addition to a rather generic concept put forward by the European Commission [57], Sacco et al. [58] defined cultural crossovers as an internalisation of unintentional and unplanned spillovers, in particular for the sake of policy design in the spheres of innovation and social cohesion. Although such a definition is still to be elaborated, especially for operational purposes, it accounts for a more recent focus shift from the definition and measurement of creative spillovers to their integration and, to some extent, their enabling. This would in part explain the absent or limited consideration of the explicit role played by universities and HEIs in fostering creative spillovers that still result in the literature, where also a few existing contributions [43,45,47,49,55] do not particularly focus on such a role.

#### **4. Universities’ Mission, Spillovers, and the Creative Economy**

In addition to the rise of a policy oriented toward the knowledge-based economy in response to global and regional competitiveness, universities have been increasingly urged to take important policy-instrumental and market-oriented strategic roles for the creation and transfer of knowledge in society and the economy [59]. This eventually contributed to expanding universities’ scope of activities, notably through their entrepreneurship or TM, while at the same time reformulating universities’ existing core activities of teaching and research (see, e.g., [60]). For a university, the TM represents a way to commercially



and institutionally capture the knowledge spillovers that it generates, contributing to the university's financial viability and social accountability. Universities present two main mechanisms of knowledge spillovers: academic research (codified knowledge in the form of scientific research published in scholarly journals) and human capital (students and graduates) [61]. Arguably, these spillovers are synergic to each other [62]. Typical entrepreneurial ways to capture these spillovers include patenting, licensing, institutional agreements, consultancy, incubators, and academic spinoffs and startups.

Research has been particularly focused on spillovers generated by research, and, lately, by academic entrepreneurship for its relevance in contributing to regional innovation and competitiveness (see Sandstrom et al. [63] for a recent critical review), although teaching-led universities have also proven to contribute to entrepreneurship and innovation, especially at the local level [64]. The impact of academic entrepreneurship on growth and performance is wider when entrepreneurship goes beyond commercialisation—such as patents, licensing, collaboration agreements, and academic spinoffs and startups—to also encompass entrepreneurial thinking, actions, values, and institutions (that is, “entrepreneurial capital”), which allows the spillover of knowledge to firms and non-profit organisations [12]. Although important, a mere commercialisation approach might be reductive in untapping the full potential of knowledge spillovers generated by public research and teaching, such as the case, but not the only one, of the arts and creative economy. Audretsch [12] opened to more intangible dimensions of university entrepreneurship, such as the social and behavioural ones. In particular, Simeone et al. [65] pointed to the difficulty of a sole economic perspective of quantifying the value generated, in particular, by arts and design entrepreneurial academic settings.

Noticeably, from both policy and research perspectives, academic entrepreneurship was initially reserved for the commercialisation and technology transfer of scientific activities only, pushing back the TM of more complex non-scientific creativity, and the realisation of its potential, to a later stage. This is mirrored in the empirical literature on university spillovers, which mainly covers hard/fundamental science, technology and engineering, natural science, and social science, whereas the arts and humanities alone are seldom the object of spillover considerations. For instance, in their study of knowledge interactions between different fields of research and sectors of economic activity, Scharfetter et al. [66] distinguished arts and humanities from other science fields; Comunian et al. [67] considered the attraction of arts students and then the retaining of arts graduates as separate from and more relevant than knowledge spillovers, spinoffs, and knowledge transfers, and representing a longer-term impact strategy at the regional level. Otherwise, the arts and humanities are blurred and studied together with other disciplines, typically social science [61,64,68]. Moreover, in these studies, knowledge spillovers are measured in terms of tangible economic indicators, such as new firm creation in proximity of the universities. However, such indicators result to be more adequate and significant for applied and basic science, rather than for social science and the humanities—arts included. Therefore, it is not surprising that, as found by Bonaccorsi et al. [68], a university specialisation in social science and the humanities would have no impact on the local productive system in terms of new firm creation in any industry, contrary to a technological specialisation.

The geographical dimension is fundamental for knowledge spillovers [69]. Following the growth theory, cities can be considered the repositories of knowledge spillovers and engines of local productivity and urban growth, with spillovers being more important in larger than smaller cities and especially in developing countries, where large cities change from manufacturing to service industries, which implies a higher importance of face-to-face interactions and networking [70]. At the micro level, the so-defined spatial perimeter allows one to explicitly track the process and effects of knowledge development through college education, wage levels, patents, and R&D. In the case of the CCIs, there is a need for some alternative relevant measures, as creative-oriented higher education is intended in its contemporary meaning, which encompasses not only traditional universities but also equivalent-level specialised institutions such as art academies, music conservatories,

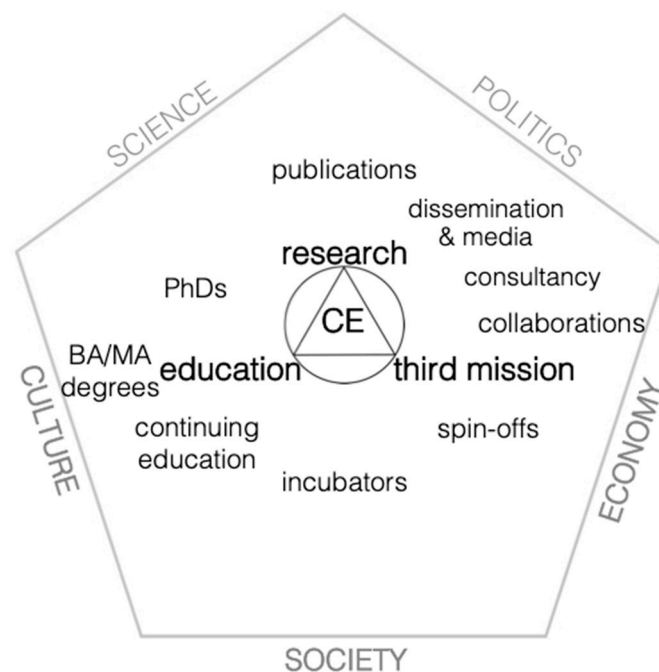
and other creative-discipline educational centres. Moreover, wage levels as productivity indicators can be questioned in the case of the CCIs, as evidence shows that there are forms of compensation of creative professionals complementary to the sole monetary one [71]. The presence of cultural amenities synergic to creative higher education (HE) further supports the urban argument for knowledge spillovers. Empirical evidence shows the spatial importance of creative agglomerations (or quarters) to effectively link the CCIs and HEIs, although creative commercialisation and technology transfer are still challenged by some typical features of CCI outputs and processes, such as very short life cycles, intangibility, diversity, complexity, and protection of individual creativity, which can hardly cope with some HEI features such as bureaucracy [17]. Due to their interdisciplinarity encompassing the economy and technology, cultural and creative industries in HEIs and art schools have been increasingly regarded as a relevant engine to foster growth and regional development.

If we consider CCI organisations as particularly characterised by symbolic-based knowledge (as opposed to synthetic, as is the case of, e.g., the IT industry), their spatial proximity to universities, especially in denser inner cities (as opposed to suburban areas) better allow for tacit knowledge spillovers, which typically involve highly localised, flexible, and dynamic projects [72]. Such proximity is increased when the cooperation between universities and CCI companies takes the form of university spinoffs, where universities contribute innovation, a critical mass of academic human capital, and socio-cultural diversity, tolerance, and networking. On the other hand, due to the average nano size of CCI companies [73], those spinoffs, similar to corporate spinoffs, do not always characterise creative clusters [74]. A spillover approach can be suitable for filling research gaps that still exist in CCI geographies, such as differences, similarities, and relationships between different CCI sectors; public and non-profit sectors (other than business development); and especially the interconnections between different drivers, including agglomeration economies, spinoff formation, institutional environment, and globalisation versus local conditions [74].

Figure 1 illustrates a regionally contextualised model of academic creative economy encompassing the university's three main functions, and the relative activities and outputs of creative-economy university programs. The perimeter in the figure accounts for the broader regional ecosystem where the university operates and interacts with a variety of other stakeholders from the economy, society, politics, science, and culture [75], which also reflect the complex multidimensionality of cultural and creative crossovers (Section 3 above). Different from the general Triple Helix model of university–industry–government relations [76], the spillovers across the perimeter into its five external facets are especially enabled by the TM function, although education and research also contribute to such spillovers. The positioning of the creative economy at the centre of the five spheres reflects the Quintuple Helix model [77], where the CCIs have an important impact on the whole economy and society.

Remarkably, creative HE is more critically placed at the divergence between a neo-liberal competitive entrepreneurialism and a broader public–societal impact of HE, where a community approach (communities of practice, local stakeholder management, and community agenda) can better allow the knowledge spillovers generated from the production and retention of such highly skilled and talented human capital [13]. Disentangling and enabling the formal and informal knowledge spillovers of particularly intangible assets such as the CCIs [78] then become essential in order to compensate for a relatively lower (with respect to other sectors and related HE disciplines) commercialisation capacity in terms of stable job creation and retention, spinoffs, patents, and licenses within the CCI. With respect to the HE–TM framework proposed by Trippel et al. [79], the TM of creative-oriented HEIs can be more effectively supported by a hybrid model combining a regional innovation system (RIS) model with models also encompassing social, cultural, and societal dimensions. In particular, knowledge spillovers, together with informal contacts with firms, allow one to go beyond financial compensation typical of a mere commercialisation model,

where these knowledge spillovers can be conveyed, for instance, through the provision of graduates to the local labour market. On the other hand, the contribution of HEIs to regional economic and societal development depends on the different national regulatory measures and policy instruments, as empirical evidence indicates [79].



**Figure 1.** Mission and activities in the academic creative economy.

An important, although not exclusive, feature of knowledge spillovers in creative-economy academia is the two-way direction of knowledge transfer or exchange between universities and creative organisations [67], where universities are not the only institutional contributors of such knowledge, but are sided by research centres, think tanks, and the like. Stejskal and Hajek [80] distinguished between four types of knowledge sources for innovation: internal, market (other creative enterprises), institutional, and other sources. Similar to Müller et al. [81], they found that collaboration with other creative enterprises would above all generate knowledge spillovers, and universities, although important, would play a rather complementary role. This would be explained by “incompatible expectations of entrepreneurial universities, unfavourable environment for academic spinoffs, and missing opportunities for commercial exploitation” (p. 999), that is, a lack of academic units facilitating the transfer of codified knowledge. More in general, knowledge spillovers in the creative economy are stronger where there are more different related institutions and organisations, and more interactions between them [82]. Furthermore, they would be more effective than in other industries when interpersonal or face-to-face interactions and networking [5,70] (to increase trust and hence decrease uncertainty) and knowledge acquisition by working are in place [83]. Interestingly, the spillover mechanism of human capital (creative workforce) would have an innovation impact also on industries other than the CCIs [84].

Notwithstanding an increasing accountability and impact measurement of HEIs, their TM implementation is still far from taking place in a regionally involved and systematically coordinated way with a diversity of involved policymakers, customers, clients, users, and other policymakers [85], where the spatial dimension is particularly crucial for knowledge and knowledge spillovers [69]. Following the considerations made for creative spillovers, for university spillovers as well, next to their identification and measurement, their operationalisation and enabling is essential, especially for policy purposes. Guridi et al. [86] proposed a complex systemic approach considering different types of positive (and nega-



tive) spillovers that can be generated by scientific excellence exploiting the geographical uniqueness of natural laboratories—irreplicable, similar to culture—and international collaboration. In particular, their contribution suggests ways of leveraging those spillovers, including a temporal dynamic perspective of short- versus long-term impacts and policy orientation. University-CCI spillovers can allow the sharing and integration of different forms of knowledge, such as university R&D and experience gained in the workplace, although differences in the knowledge bases and lack of reciprocal understanding may limit these spillovers [2]. Especially in competitive global markets, such as the animation industry, where the cooperation between industry and academia (and government) is developed in the form of an open-innovation system, it can effectively integrate the internal knowledge management of a company's innovation strategies in the face of limited knowledge and experience [3]. Noticeably, public policy support is crucial, as it contributes to defining the innovation ecosystems and financing their early stages, including startups, spinoffs, incubators, technology parks, etc. Such government impact is particularly relevant when these policies are embedded in overall regional strategies aiming, for instance, at a higher public-private integration, investment attractiveness, internationalisation, regional branding, and regeneration [3,4].

## 5. Conclusions

This paper offered an articulated critical overview combining the economic literature on cultural and creative spillovers with that on university spillovers, with a focus on a creative-economy context. After a brief introduction on the main concepts of spillovers and their development, especially in terms of innovation, I highlighted how culture and creativity represent a rather recent, diverse, and growing area of application of spillovers in research. Both knowledge spillovers and creative spillovers share a particular worth in terms of innovation, growth, and territorial connotation. However, because the complex and intangible nature of the CCIs and their generated assets and value span far beyond their market value, creative spillovers present idiosyncratic challenges. From a policy perspective, in the face of global socio-economic challenges and pressure, the CCIs are increasingly considered conveyors of a series of cultural, economic, and social benefits.

The analysis stressed some important elements of creative spillovers within the context of university TM, such as spatial proximity, face-to-face interactions, and networking. The definition, measurement, and enabling of creative spillovers put important challenges and reconsideration of the full suitability and completeness of creative-economy university TM's typical features, such as spinoffs, job creation, incubators, startups, and other possible outputs, to expand toward social dimensions such as wellbeing and social cohesion, to encompass the dual policy requirements of universities' commercialisation capacity and social accountability.

The analysis also pointed to the fact that despite the great potential of creative spillovers, in particular for innovation and development purposes, a creative-economy perspective is still limited when the concept of spillovers is applied to the institutions designated to producing research, human capital, and innovation, namely, universities. Moreover, it was stressed how in both creative and university spillovers the research focusing on the definition and possible measurement of spillovers is more recently being integrated with the enabling of positive spillovers. In this perspective, the literature on university spillovers seems to be relatively more advanced in the operationalisation of spillovers, pointing to a complex systemic approach where culture and creativity need to be more explicitly considered. In this sense, a contextualised model of academic creative economy was proposed.

Academic creative spillovers especially involve a territorial or spatial dimension, which also suggests their limited standardisation and replicability, where each local experience can be considered as a unicum. Noticeably, this uniqueness importantly adds to the particularity of each CCI sector. From a research perspective, this can stimulate further analysis and the development of a taxonomy of best practices. In terms of process,

such investigation can contribute to informing university spillovers in more traditionally studied disciplines such as technology. Implementation directions suggest ways of leveraging those spillovers, including a temporal dynamic perspective of short- versus long-term impacts and policy orientation. Overall, the policy approach calls for a bottom-up, communitarian interaction, involving all different parties, users and stakeholders. From a temporal perspective, the decisive role of public support, not only through funding, but also by contributing to the design of regional strategies and ecosystems, stresses the need of combining short- and long-term and dynamic orientations.

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