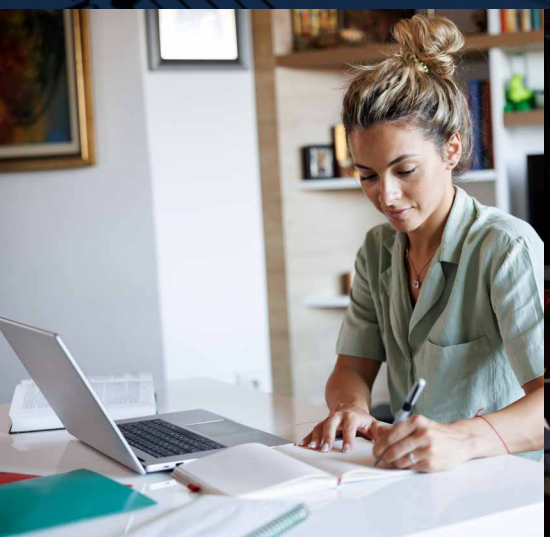
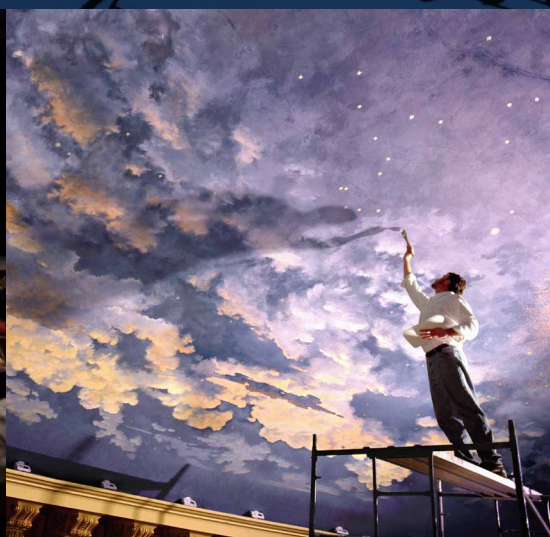
U.S. Chamber of Commerce

Unlocking Creativity

A Study of the Socioeconomic Benefits of Copyright





OXFORD ECONOMICS

About Oxford Economics

Oxford Economics was founded in 1981 as a commercial venture with Oxford University's business college to provide economic forecasting and modeling to UK companies and financial institutions expanding abroad. Since then, we have become one of the world's foremost independent global advisory firms, providing reports, forecasts and analytical tools on more than 200 countries, 100 industries, and 8,000 cities and regions. Our best-in-class global economic and industry models and analytical tools give us an unparalleled ability to forecast external market trends and assess their economic, social, and business impact.

Headquartered in Oxford, England, with regional centers in New York, London, Frankfurt, and Singapore, Oxford Economics has offices across the globe in Belfast, Boston, Cape Town, Chicago, Dubai, Dublin, Hong Kong, Los Angeles, Mexico City, Milan, Paris, Philadelphia, Stockholm, Sydney, Tokyo, and Toronto. We employ 700 staff, including more than 450 professional economists, industry experts, and business editors—one of the largest teams of macroeconomists and thought leadership specialists. Our global team is highly skilled in a full range of research techniques and thought leadership capabilities from econometric modeling, scenario framing, and economic impact analysis to market surveys, case studies, expert panels, and web analytics.

Oxford Economics is a key adviser to corporate, financial and government decision-makers and thought leaders. Our worldwide client base now comprises over 2,500 international organizations, including leading multinational companies and financial institutions; key government bodies and trade associations; and top universities, consultancies, and think tanks.

December 2024

The modeling and results presented here are based on information provided by third parties, upon which Oxford Economics has relied in producing its report and forecasts in good faith. Any subsequent revision or update of those data will affect the assessments and projections shown.

To discuss the report further please contact:

Oxford Economics
5 Hanover Sq, 8th Floor New York, NY 10004
Tel: +1 646-786-1879

Table of Contents

Executive Summary

Copyright is a catalyst for world-changing creativity

It is the foundation for a variety of industries–from publishing, architecture, and software to visual arts, music, and film and TV–and it incentivizes creators to develop, deliver, and disseminate their work to people around the world. As the global economy moves toward digital transformation, it is more important than ever to safeguard the copyright protections that facilitate the exchange of ideas and other intangible goods and services. This is the marketplace of the future and a proven engine for economic growth, job creation, creative production, cultural exchange, and more.

- **Copyright fuels economic growth**
  Copyright-intensive industries bolster economies at every level. Individual countries quantify these contributions at up to 14.1% of their total GDP. In the U.S., the number is 7.8% of GDP, which translates to $1.8 trillion each year. In total, the global creative economy is worth $12 trillion.

- **Copyright creates jobs**
  Almost every country reports that copyright-intensive industries support at least 5% of national employment. In the U.S., the percentage is more than 8% or 16 million jobs. Translated to a global scale, the creative sector alone is responsible for 50 million jobs. Additionally, these jobs offer a compensation premium over average annual compensation.

- **Copyright drives greater and higher quality creative production**
  Data confirms a positive association between strong copyright protections and increased generation of online and mobile content; broader access to new music, TV, and movies; and higher quality creative production. Strong copyright systems also produce a plethora of new creators, and thus, new and more varied creative goods and services.

- **Copyright fuels cultural exchange**
  Copyright-intensive industries promote knowledge-sharing, community building, and are tied to the preservation of history and heritage.

- **Weakening copyright has consequences** When countries don't implement or enforce strong copyright protections, copyright-intensive industries suffer, as do consumers and economies at large. Most literature concludes that copyright infringement significantly impacts sales of creative products and services and can lower investment in creative production. Looking at U.S. film, TV, and music specifically, infringement drains between $29 billion and $71 billion from the economy each year and leads to a loss of between 230,000 and 560,000 jobs.

The growing body of literature makes it clear: There are significant benefits to supporting copyright-intensive industries and ensuring strong copyright protection for the creators at the heart of the world's knowledge economy. Trillions of dollars of economic activity and millions of jobs–as well as invaluable cultural contributions–depend on continued investment in a strong global copyright system.

Foreword

The U.S. Chamber of Commerce is proud to present this comprehensive literature review on copyright—a cornerstone of America's economic vitality and cultural identity. Copyright industries exemplify the ingenuity and creativity that define our Nation, serving as a powerful engine for economic growth, high-quality job creation, and global competitiveness.

As underscored in the recently released *Copyright Industries in the U.S. Economy: The 2024 Report* by the International Intellectual Property Alliance (IIPA), the contributions of these industries are nothing short of extraordinary. In 2023, core copyright industries alone added over $2 trillion to the U.S. GDP, representing 7.66% of the economy. When expanded to include the total copyright industries, this figure rises to an impressive $3.37 trillion, or 12.31% of GDP. These industries employ nearly 21.14 million Americans—9.91% of the nation's workforce—with compensation levels that far exceed the national average. Workers in core copyright industries earned an average of $141,880 in 2023, a 50% premium over the average U.S. wage, underscoring the exceptional quality of jobs these industries provide.

Beyond their domestic impact, copyright industries are a formidable force in global markets. In 2023, foreign sales of selected U.S. copyright sectors—including recorded music, motion pictures, and software publishing—exceeded $272 billion, surpassing major industries such as chemicals, agriculture, and aerospace. These figures underscore the unparalleled ability of American creativity to compete and thrive on the world stage, reinforcing our leadership in innovation and cultural influence.

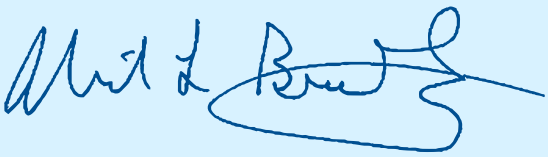
The copyright industries also anchor the digital economy, accounting for over 63% of its value added in 2022. This leadership in digital innovation not only fuels economic growth but also ensures that the United States remains at the forefront of technological and cultural advancements. However, this success is not without its challenges. Digital piracy poses a significant threat to these industries, their workforce, and American consumers. According to the Chamber's 2019 *Impacts of Digital Video Piracy on the U.S. Economy* report, digital piracy costs the U.S. economy between $29 billion and $71 billion annually, with job losses ranging from 230,000 to 560,000 and GDP reductions of up to $115 billion. This illicit activity undermines the investments made by creators and businesses, jeopardizing the innovation and cultural contributions that enrich our society. To address this evolving threat, the Chamber is actively working to update and expand this study to provide a more accurate and comprehensive depiction of the impact of digital piracy.

In an increasingly interconnected and digital world, the importance of strong intellectual property protections cannot be overstated. These protections form the bedrock upon which creators, innovators, and businesses build, enabling them to invest in new ideas, develop groundbreaking products, and share their work with audiences worldwide. Copyright protections are not just legal safeguards—they are the foundation of our creative ecosystem and a critical driver of our economic and cultural leadership.

This review serves as a vital resource for understanding the profound economic and cultural benefits of copyright and underscores the urgent need to safeguard these protections for future generations. The data and insights provided in this report make a compelling case for robust intellectual property protections as a means to sustain and enhance U.S. global leadership. Moreover, the report highlights the challenges posed by digital piracy and the erosion of IP rights. Addressing these challenges requires effective enforcement, international cooperation, and a steadfast commitment to protecting the interests of America's creative and innovative industries.

We extend our gratitude to Oxford Economics for the rigorous analysis and to all stakeholders who continue to champion the cause of intellectual property. The U.S. Chamber of Commerce remains unwavering in its commitment to advancing policies that support and protect American industries. Together, we can ensure that America's creative and innovative spirit continues to thrive, driving economic growth, inspiring the world, and improving lives for generations to come.

Sincerely,



Neil Bradley
Executive Vice President,
Chief Policy Officer and Head of Strategic Advocacy

1. Introduction

The global economy is undergoing a process of digital transformation. In this context, countries continue to grapple with the appropriate scope for the protection of creators, innovators, and ideas. Among these considerations is the extent of copyright protections.

The U.S. Chamber of Commerce commissioned Oxford Economics to review the literature that quantifies the scale of copyright-reliant industries within and across countries and sets out some of the important potential benefits of copyright more generally.

1.1–Intellectual Property

Intellectual property (IP), broadly including patents, copyrights, trademarks, and trade secrets, provides legal certainty for creators and innovators wanting to invest in knowledge production. Strong intellectual property rights grant a type of market power over ideas, providing incentives and a stable foundation for their creativity and innovation.[1]

The World Intellectual Property Organization (WIPO) Lex Database stores legal information on intellectual property, including copyright, for countries across the globe. The data includes intellectual property laws and regulations, WIPO-administered treaties and intellectual property related treaties, and intellectual property judgments.[2]

1.2–Copyright

Copyright is a form of intellectual property protecting original works of authorship.[3] The exclusive rights provided to owners of the copyright include things such as reproduction and preparation of derivative works. Infringement of these rights can give rise to legal damages. In the economic context, copyright helps to create markets for the licensing of these rights, and, through the facilitation of market transactions, provides incentives to produce new works and increases the number of people who are incentivized to create those works.[4]

Creative works enhance the welfare of society and are associated with significant economic activity. For example, Oxford Economics estimated that in 2019, concerts and the live entertainment industry in the United States had a total economic impact of $132.6 billion, supported 913,000 total jobs, and was associated with labor income of approximately $42.2 billion.[5]

Economic Activity Associated with the Live Entertainment Industry

Taylor Swift's recent *Eras* tour has, for example, been associated with significant economic activity. Each fan spent an average of $1,300 across a host of local economies. The total direct spending equaled to approximately $5 billion with the total economic impact associated with these concerts at more than $10 billion. It has been estimated that two Denver concerts alone contributed around $140 million to Colorado's GDP.[6] In Los Angeles County, it was estimated that Taylor Swift concerts would result in an increase of $320 million in local GDP, an extra 3,300 local jobs, and a rise in local earnings by $160 million.[7]

The goal of copyright is to provide a market-based incentive to increase access to creative works.[8] By granting some measure of market power, copyright helps ensure that creators are appropriately compensated for their effort, and thus creates incentives to allocate resources *ex ante* for creative expression. The creative process frequently involves high fixed costs, and when and where it is not possible for creators to prevent people consuming—or enjoying—the results of their work without paying for it, they may be less incentivized to produce future creative output if they cannot capture the economic value of previous work.[9] In section 2, we summarize the literature which estimates the economic footprint of copyright-reliant industries. Section 3 introduces the economics literature which attempts to relate the presence and enforcement of copyright protections to increased revenues for authors, and greater and higher quality creative production. Section 4 concludes.

2. Copyright-reliant industries

Copyright-reliant industries have been defined by the U.S. Copyright Office as those that "rely on copyright for their core business models." Following the U.S. Copyright Office's classification,[10] core copyright-reliant industries can be identified as those set out in Table 1.[11] These industries comprise a substantial share of economic activity and jobs, as detailed further in Section 2.1.

Table 1. Core copyright-reliant industries

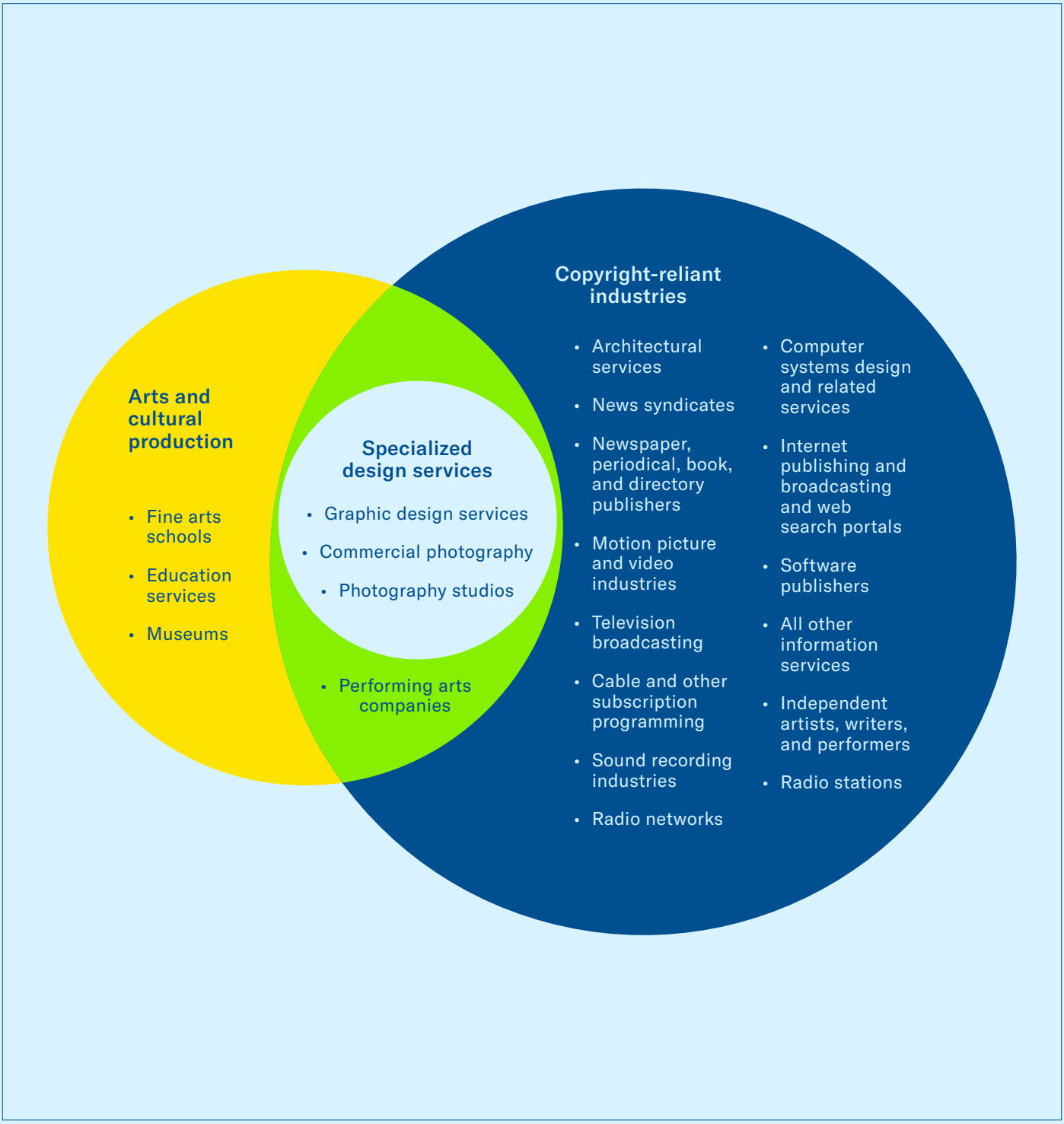
Architecture	**Software**
• Architectural services	• Software publishers • Internet publishing and broadcasting and web search portals • Computer systems design and related services • All other information services
Literary works	
• Newspaper, periodical, book, and directory publishers • News syndicates	
Motion pictures	**Visual and graphic arts**
• Motion picture and video industries • Television broadcasting • Cable and other subscription programming	• Graphic design services • Photography studios • Commercial photography
Musical works	**Other**
• Sound recording industries • Radio networks • Radio stations • Performing arts companies	• Independent artists, writers, and performers

By their nature, copyright-reliant industries—as defined by the U.S. Copyright Office—revolve around creative endeavors. Therefore, they fit within the broader mold of what some writers have called "creative industries,"[12] identified as "those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property."[13] Industries classified as "creative" include advertising, antiques, architecture, crafts, design, fashion, film, leisure software, music, performing arts, publishing, software, and television and radio.[14] There are significant overlaps in the definitions. For example, in the UK, the Department of Digital Culture, Media, and Sport includes an illustration of the conceptual and definitional overlap of creative and cultural industries, which also highlights the importance of digital distribution (simplified as Figure 1). Figure 2 shows the sense in which the Bureau of Economic Analysis quantifies the economic impacts of the "Arts and Cultural Industries" and the overlap with "copyright-reliant" industries.

Fig. 1. The relationship between creative and copyright-reliant industries (UK)

Source: Adapted from UK DCMS, "Guidance: DCMS Sector Economic Estimates Methodology"[15]

Fig. 2. The relationship between arts and cultural and copyright-reliant industries (US)



Source: Bureau of Economic Analysis, "Arts and Cultural Production Satellite Account, U.S. and States," 2022, U.S. Copyright Office, "The Resilience of Creativity: An Examination of the COVID-19 Impact on Copyright-Reliant Industries and Their Subsequent Recovery," 2022.

2.1–Contribution of Copyright-reliant Industries to Economic Activity

Several studies have been conducted to assess the size of copyright-reliant industries both nationally and globally by various intellectual property offices. These offices have a broad responsibility for assessing the economics of IP generally, which also covers copyright.[16] The high-level findings of these studies, focusing on copyright-reliant industries' economic contributions specifically, are set out in Table 2.[17] These studies typically distinguish the economic contribution of "Core" copyright industries, or those directly involving copyright-protected subject matter, from economic contribution of the "Total" set of copyright-reliant industries, which includes "interdependent," "partial," and "non-dedicated" industries, as defined in the notes to Table 2 below.

Table 2. Economic contributions of copyright-reliant industries

Geography	Author, study year	Contribution to GDP		Contribution to employment		Contribution to exports
		Total	Core	Total	Core	
Global	WIPO, 2021[18]	5.6%	2.9%	5.8%	2.8%	N/A
Developing countries	WIPO, 2021	4.6%	2.3%	4.6%	1.9%	N/A
Developed countries	WIPO, 2021	7.4%	4.4%	6.9%	4.2%	N/A
United States	IIPA, 2021[19]	12.5%	7.8% ($1.8 tn)	8.1% (16.1 m)	4.9%	$230.3 bn
European Union	EUIPO, 2022[20]	N/A	6.9%	N/A	N/A	N/A
United Kingdom	UKIPO, 2016[21]	14.1% (£156.8 bn)[22]	13.3%	7.0% (2m)	6.3%	4.8% (£14.7 bn)
Canada	WIPO, 2019[23]	4.9% (CA$ 95.6 m)	3.5% (CA$ 69.2 m)	5.5%	3.6%	CA$ 24.1 bn
Australia	IPO, 2020[24]	6.2% (AU$ 122.3 bn)	3.7%	5.9% (0.7 m)	N/A	N/A

Note: Values refer to the direct economic impact of copyright industries. "Core copyright industries" are those involved in the creation, production, performance, exhibition, communication, or distribution and sales of copyright-protected subject matter, typically including press and literature, music, theatre, film, media, photography, software, visual arts, and advertising services. "Total" copyright industries combine core industries and "interdependent," "partial," and "non-dedicated" industries. "Interdependent" industries include manufacture and sale of equipment such as television sets, computers, musical, and photographic instruments, etc. "Partial" industries have only part of the production linked to copyright protected material, such as apparel, architecture, jewelry, interior design, and other crafts. "Non-dedicated support" industries are those with low reliance on copyright material, such as general wholesale and retail, communications, and transportation. The Global, US, UK, Australia, and Canada reports follow the 2015 WIPO guidelines revisions, *Guide on Surveying the Economic Contribution of the Copyright-Based Industries*. The EU report follows 2003 guidelines.

Various additional data are available for estimating the footprint of copyright-related industries. For OECD countries, the OECD's Structural Analysis (STAN) records detailed industry performance.[25] It covers output, gross value added (contributions to gross domestic product), intermediate consumption (procurement), wages and salaries, profits, gross fixed capital formation, and employment. This database can be used to track copyright-related industries against these metrics for each OECD country over time. At the time of this writing, the database runs from 1970 to 2019. However, not all countries have data for all 50 years: most countries begin recording detailed statistics in the 1990s and, depending on how recently their data was updated, run to either 2017, 2018, or 2019.

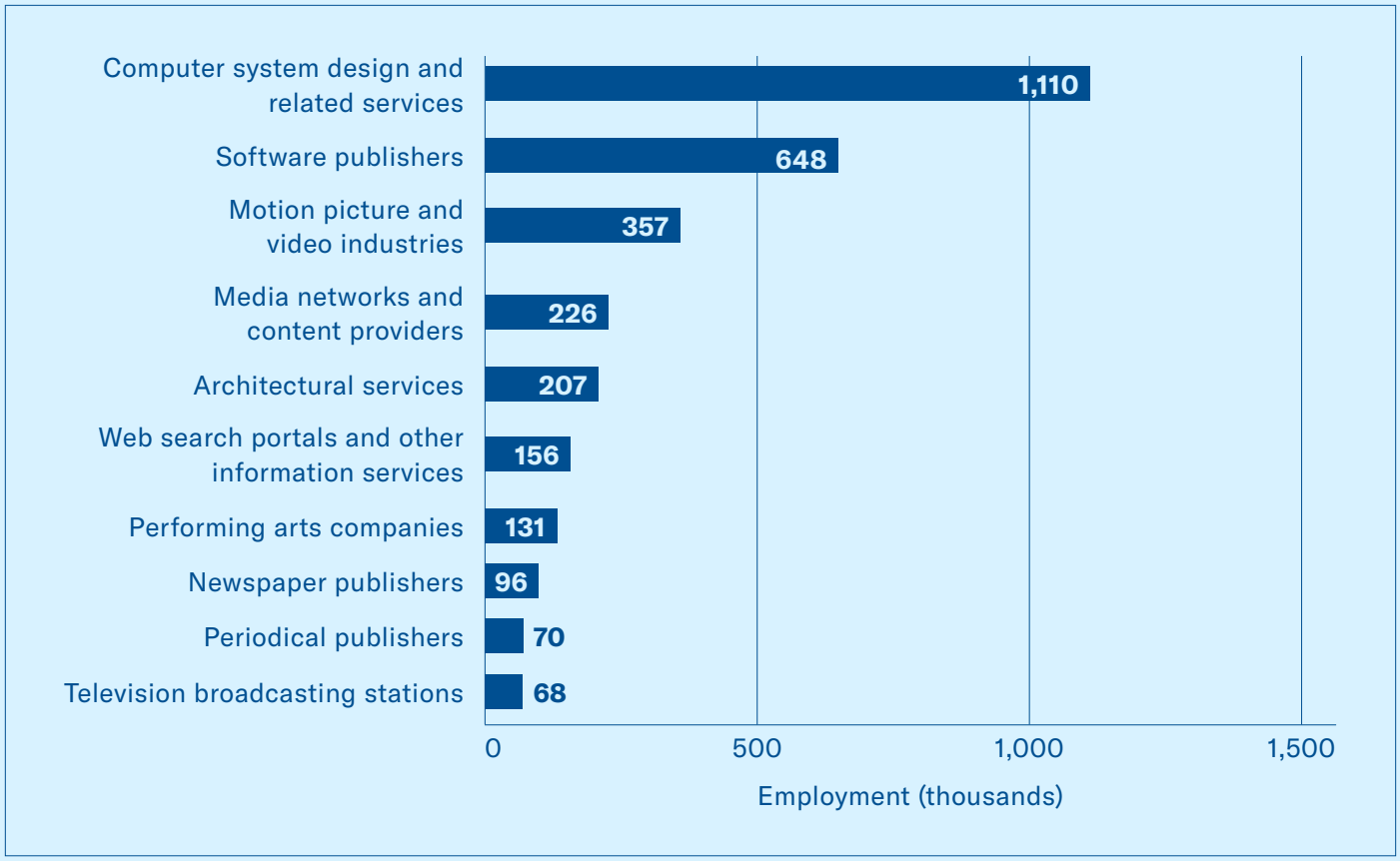
Individual countries may have more detailed statistics. For example, in the US, the Bureau of Economic Analysis (BEA) releases detailed industry breakdowns at the state level.[26] The BEA also publishes the Arts and Cultural Production Satellite Account, illustrated above, which provides very granular industry detail for arts and culture activities (e.g., it records state level statistics for the *independent artists, writers, and performers* industry).[27]

2.1.1–Supporting GDP and high-paying jobs

As illustrated in Table 2, it is estimated that the core copyright industries directly contributed approximately $1.8 trillion to US GDP, accounting for 7.8% of GDP and 8.1% of employment (Table 2).[28] The top 10 copyright-reliant industries by employment in 2023 in the US are set out in Figure 3 below. Computer system design and related services has the highest number of employees (1.1 million), followed by software publishers (0.65 million) and motion picture and video industries (0.36 million).[29]

The jobs created enjoy a compensation premium over average annual US compensation. In 2021, employees working in "core" and "total" copyright industries (as set out in Table 2) earned a compensation premium of 51% and 29%, respectively. Employees in core copyright industries earned an average wage in excess of $120,000, while employees in the total copyright industries earned approximately $100,000, compared to average annual US compensation of nearly $81,000.[31]

Fig. 3. Direct employment of selected copyright-reliant industries in the US[30]



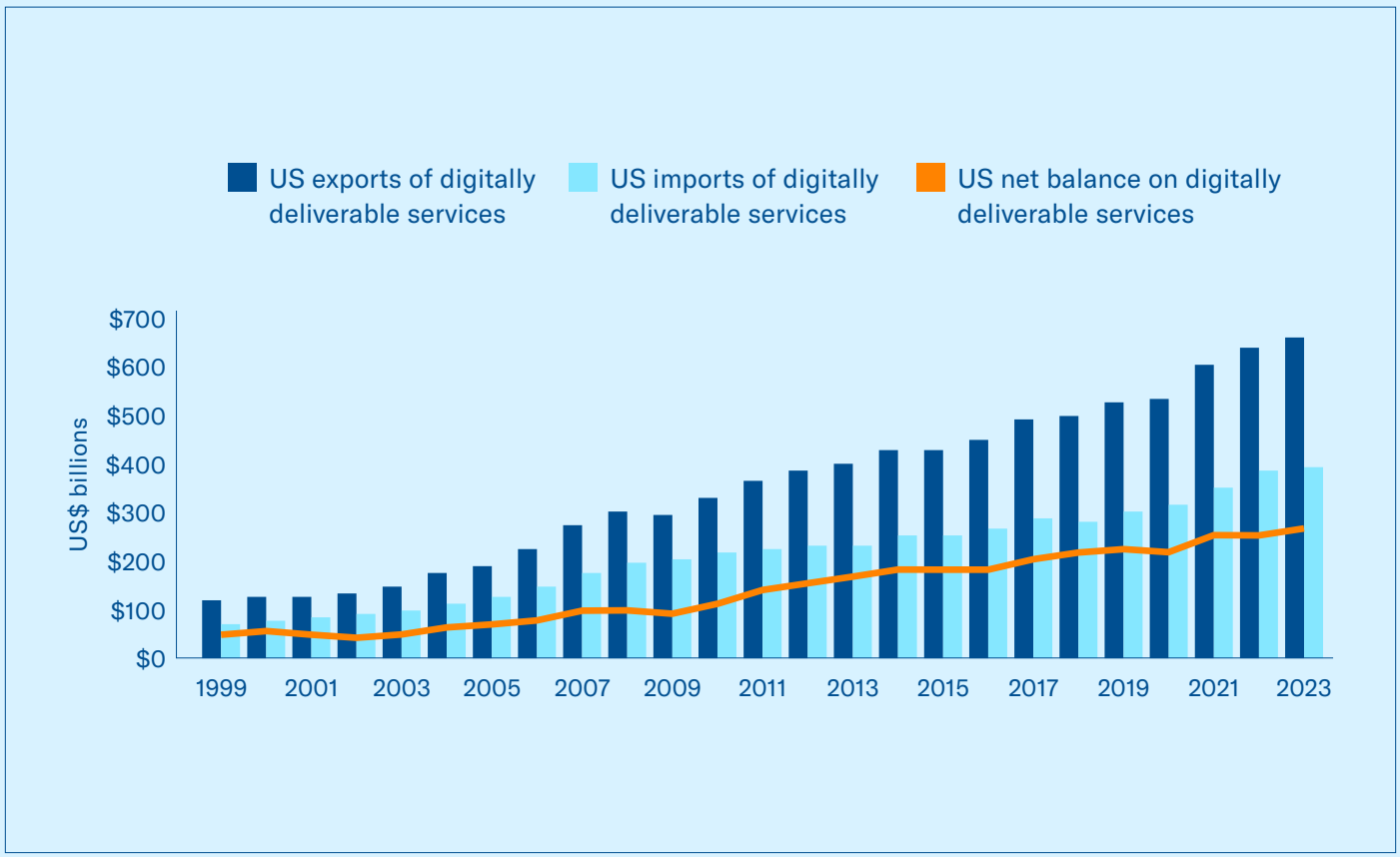
Source: Oxford Economics, QCEW, U.S. Copyright Office

Cultural and creative industries have been recognized for their important role in helping to meet the United Nations' Sustainable Development Goals (SDGs). For example, UNESCO recognizes the importance of cultural and creative industries as "valuable resources for generating livelihoods" and trade in cultural goods as "[providing] employment opportunities for decent work" and hence as contributing to SDG 8 (Decent Work and Economic Growth).[32] According to the International Finance Corporation (IFC), the global "creative economy" is $2 trillion in size.[33]

UNESCO's 2022 report "Reshaping policies for creativity" states that the cultural and creative sector in 2020 accounted for 3.1% of global GDP and 6.2% of all employment (and supports 50 million jobs worldwide).[34] The industry also tends to employ more people aged 15–29 than other sectors.[35]

Florida (2002)[36] popularized the concept of the "creative class," and the idea of innovation (and "regional and national growth") as driven by diversity and creativity.[37] Florida's work focuses on cities' growth as driven not just by firm location decisions, but by lifestyle considerations (what economists call "consumption amenities"). For Florida, the "creative class" engages in work that "creates meaningful new forms."[38] While the concept is broad (capturing many occupations and around 30% of the US workforce) it overlaps with "copyright-reliant" work. Similarly, the concept of "creative cities," as reflected in initiatives such as the UNESCO creative cities network launched in 2004,[39] references many copyright-reliant industries.[40]

Fig. 4. Trade of digitally deliverable services, US



Source: Oxford Economics and BEA

2.1.2–Contributing to exports

Digitally traded services (including copyright-reliant products) play a key role in US trade. Over the last two decades, the growth of these exports has been greater than the growth of exports in other traded services and goods.[41] BEA data suggests that the US digital trade surplus has grown by 408% since 1999 (Figure 4).

Copyright-reliant products are often digitally traded. These products include, but are not limited to, software licenses, cloud computing and data storage services, and digitally traded cultural and recreational services. According to the International Intellectual Property Alliance (IIPA), the core copyright industries contributed approximately 56% of the US digital economy in 2021, while the total copyright industries reached approximately 65%.[42]

The digital economy is important for the US trade balance. In 2021, according to UNCTAD, "creative goods and services represented between 3% and 21% of total merchandise and services exports, respectively."[43] For instance, the motion picture industry has maintained a trade surplus in every major market worldwide. In 2021, the US motion picture industry accounted for approximately 4% of the overall US trade surplus. This is higher than the individual trade surpluses of telecommunications, transportation, insurance, and health-related industries.[44]

2.2–Examples of the Impacts of Copyright-reliant Industries

Beyond estimates of the total contributions of copyright-reliant industries, numerous studies focus on a particular industry. Table 3 is a non-exhaustive sample of relevant Oxford Economics reports that focus on individual copyright-reliant industries.

The Oxford Economics studies listed give an indication of the important and varied economic impacts of copyright-reliant industries, and the deep supply chains they support. Furthermore, the contributions of these industries are not limited to GDP and employment. As indicated in Table 3, the studies highlight an array of further impacts ranging from creating increased exposure for lesser-known artists and creators to the increased efficiency of knowledge-sharing facilitated by digital services platforms.[45] More generally, these studies also suggest that these industries can facilitate cultural exchange and promote diverse viewpoints.

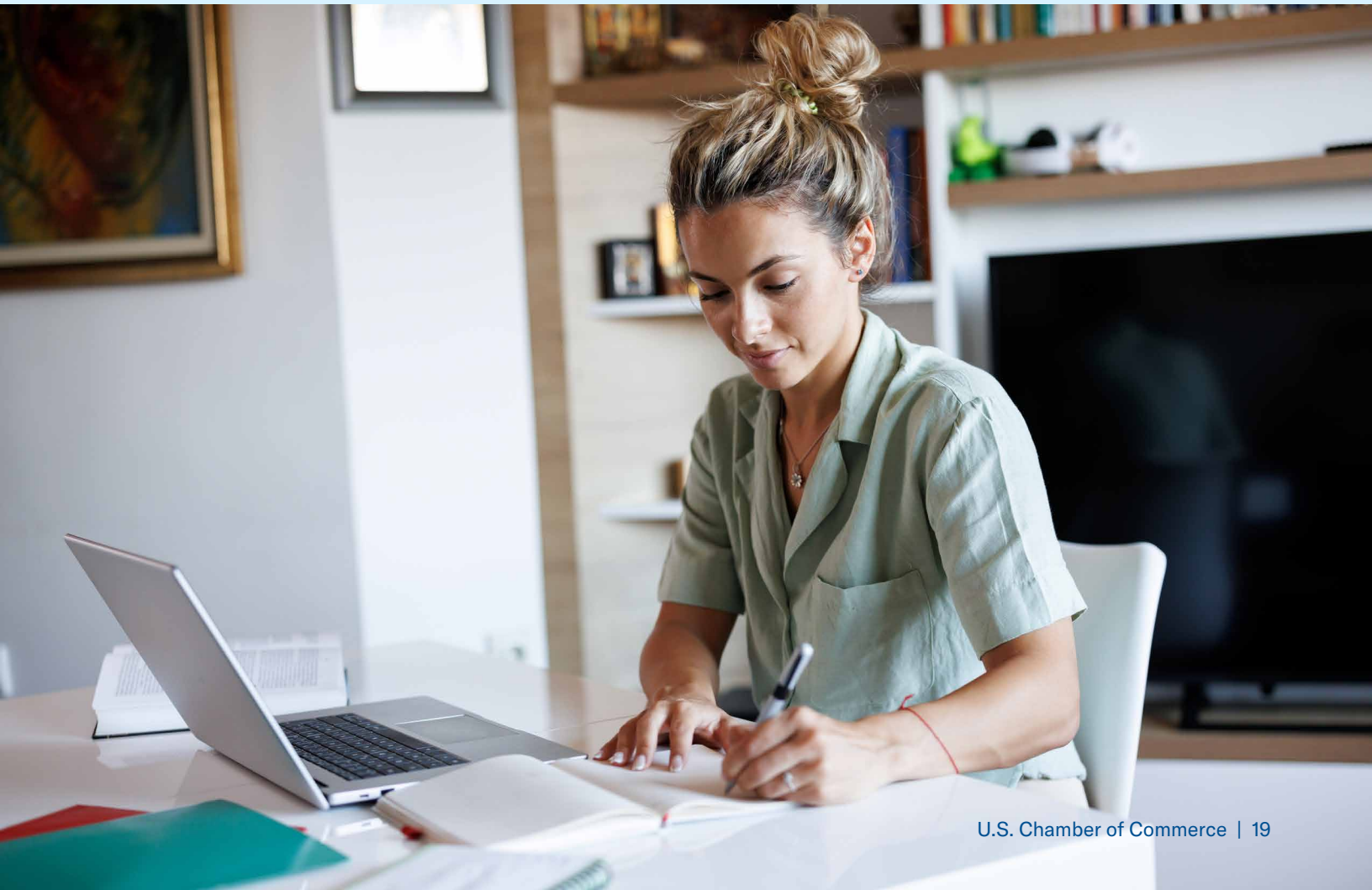
Other Oxford Economics reports also detail the economic contribution of specific productions. One such example is *Bumper in Berlin*. This series, based in Germany, contributed a total of €31.3 million to Germany's GDP and supported 700 full-time and part-time jobs across the country during the production period.[46] Such productions also have the potential to attract film-induced tourism and incentivize more local productions.[47] For example, the *Lord of the Rings* franchise has been cited as a reason for increased tourism in New Zealand.[48]

Table 3. Selected Oxford Economics studies of copyright-reliant industries[49]

Geography	Industry	Study year	Contribution to GDP	Contribution to employment	Other benefits analyzed
Mexico	Audiovisual	2024[50]	MXN $228.8 bn	77,000	Foreign direct investment, facilitating innovation in related technologies (cameras, etc.)
Brazil	Audiovisual	2022[51]	R$24.5 bn	130,000	Tourism, exports, film festivals, infrastructure investment, and training
EU+[52]	Sports activities of public service media	2024[53]	€4.9 bn	60,200	Creating additional revenue streams, innovation benefiting wider media industry, encouraging tourism, creating positive societal sentiment around sports
Europe	Music radio (EBU)	2020[54]	€3.1 bn	50,000	Promotion of smaller artists, translating into revenue streams, benefit to consumers
Europe	Digital services	2020[55]	€420 bn	Facebook platforms 3.1 m, Amazon (small sellers) 270,000+, Android platforms 1.4 m	Incentivizes innovation, creates flexible employment opportunities, facilitates support for social causes options
US	The creator economy (YouTube)	2023[56]	$35+ bn	390,000+	Creation of further career opportunities, promotes diversity of viewpoints, facilitates efficient knowledge sharing (improving productivity)
UK	Creative industries	2021 (2019 data)[57]	£115.9 bn	2.1 m	IP regime after Brexit, exports, and copyright rules
UK	Small-to-medium enterprises (SME) activity TikTok	2023[58]	£1.6 bn	32,000	Value of positive impacts of TikTok on UK users—£4.0 bn, cultural impact, upskilling of workers
Canada	Galleries, libraries, archives and museums (GLAMs)	2019[59]	CA$11.7 bn[60]	N/A	Important for the preservation of Canadian heritage, provision of educational resources, improve employability amongst users, promotes exchange of ideas—increasing innovation and productivity

Other organizations also routinely measure the impacts of various copyright-reliant (and adjacent) industries. For instance, a study by the Motion Picture Association estimated that the film and TV industry, when including the downstream supply chain impacts, as well as the spending of people all along the supply chain, supported a total of 2.4 million jobs, generated $29 billion in public revenues, and $186 billion in total labor compensation. The study also found that the industry paid 46% more than the national average in 2021.[61]

In the US, Americans for the Arts has prepared national estimates of the impact of the non-profit arts and culture industry for some years now.[62] According to their estimates from 2022, the non-profit arts and culture industry generated $151.7 billion of economic activity, supported 2.6 million jobs, and generated $29.1 billion in tax revenue to local, state, and federal governments.[63] More broadly, looking beyond non-profit and public sector activity, the BEA estimated that the core and supporting Arts and Cultural Satellite Account contributed approximately $249 billion and $825 billion respectively, of value added to the US economy in 2022, a total increase of 7.2% for the year. In 2022, the industry employed approximately 5.1 million people, up 6.4% from 2021, and total employee compensation was around $541 billion.



3. Copyright's Impact on Revenues and Creation

The United States Constitution Art.I.S8.C8 (the IP clause) enumerates Congress's power to provide rights to authors and inventors over their writings and discoveries.[64] The 1961 General Revision of the U.S. Copyright Laws sets out the primary purpose of copyright law as "to foster the creation and dissemination of intellectual works."[65] This embodies, in part, economist Joseph Schumpeter's view that the creation of temporary market power is a powerful driver for innovation; a broad literature building on his original insights tries to address the extent to which copyright protection affects innovation and creativity.

3.1–Measuring Innovation, Creativity, and Copyright Protections Across Countries

To study the relationship between copyright protection and innovation and creativity, it is important to first look at how these metrics can be measured and quantified.

The annual U.S. Chamber International IP Index combines 50 indicators to measure the degree of IP protection across 55 economies. The index allows countries to compare their IP protections with others and track changes over time.[66] Copyrights and related rights are an important component of the index, and the report tracks relevant legislative changes and enforcement actions.[67] Of the countries tracked on the dimension of copyright, the United States, Singapore, the United Kingdom, and France score highest, while Algeria, Pakistan, and Russia score lowest.

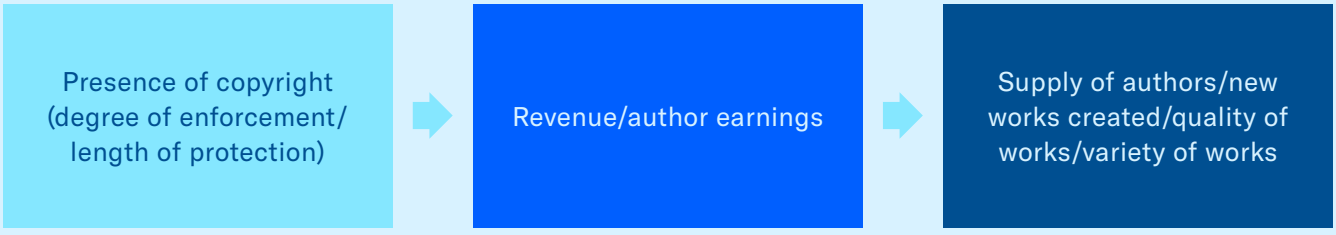
According to analysis by the U.S. Chamber of Commerce, countries can benefit from stronger copyright protections in various ways, with positive associations reported between protections and the generation of online and mobile content, greater access to new music through "legitimate, secure platforms," and more "video-on-demand and streaming services."[68] In addition, the Statistical Annex sets out various socio-economic benefits which correlate positively with the index, which the Chamber classifies under three broader categories: "Readiness for the Fourth Industrial Revolution and Future of Growth," "Resources to Innovate," and "Outputs of a Competitive Knowledge-based Economy."[69]

The WIPO Global Innovation Index (GII),[70] published annually, attempts to track innovation trends across countries. The index is built of a composite of 81 indicators and aims to "capture as complete a picture of innovation as possible." WIPO (2021) finds a positive correlation between GII and copyright-reliant industries' share of GDP. They conclude that "[t]aken together... the copyright industries make a substantial contribution to real growth and other aspects of economic performance. There was a strong and positive relationship between the copyright shares of an economy and the extent to which it can innovate..."[71] Araujo et al. (2021), using the GII as a proxy, find that innovation as an input has a significant and positive effect on innovation as an output within countries.[72] Vukoszavlyev (2019) reports positive associations between the GII and wellbeing indicators such as GDP per capita, life expectancy, and human development index.[73]

3.2–A Conceptual Framework for the Impacts of Copyright Protection

To study the relationship between copyright protection and creative production, the variation in the presence of copyright law (and the degree of its enforcement) can be regarded as the "explanatory" variable, with the outcome variable being some measure of "creation" or "innovation." The outcome variable might be the GII, or the number of authors or works created. As an intermediate step, the potential impact of copyright protection on industry revenue or author earnings can be considered. As higher industry revenues or author earnings would tend to increase the supply of authors over time, higher earnings would likely lead to greater quality, variety, and creation of more works. This basic logic is set out in Figure 5.[74]

Fig. 5. Conceptual framework to studying the impacts of copyright on innovation



3.3–Measuring the Effects of Copyright Protection on Revenues and Creation

A broad body of empirical research suggests that strong copyright protections have historically encouraged the creation of original works. An important mechanism documented has been ensuring that authors are appropriately rewarded for their works. Giorcelli and Moser (2019) examine the effect of copyright protection on the development of new operas in Italy during the Napoleonic age. They find that copyright adoption led to an increase in the number of newly created operas and their quality.[75] Earlier work by MacGarvie and Moser (2015) finds that, starting from lower levels of protection, an increase in copyright terms may result in greater profitability of authorship.[76]

Today, video and music piracy remain a challenge, despite well-known potential consumer harms such as malware, identity theft, and fraud.[77] And as the digital ecosystem continues to evolve, combatting piracy becomes even more challenging, particularly in an environment in which many global trade powerhouses have very different enforcement capabilities.

Like other forms of intellectual property, copyrighted materials are pirated because accessing, downloading, and copying copyrighted material is inexpensive and often without penalty. Famously, recorded music revenues dramatically reduced in the years after the launch of Napster. At the same time, digitization of production and lowered costs of distribution may have increased quality and quantity of products, as set out in Waldfogel (2017).[78]

3.3.1–Impacts of piracy on revenues

Unlicensed access of music is still widespread, with a 2021 IFPI survey reporting that 30% of respondents used copyright infringing, or pirated, methods to listen to or obtain music.[79] Such piracy holds a high cost for consumers, businesses, and the economy. The U.S. Chamber of Commerce and NERA (2019) have estimated reductions in revenues to US content producers through digital video piracy to be between $29 billion and $71 billion per year, with job losses of around 230,000 to 560,000 jobs and annual GDP costs of between $48 billion and $115 billion.[80]

Academic literature has also empirically tried to estimate the impacts of piracy on revenue. Danaher and Smith (2014) find that the shutdown of two sites known for video piracy (Megaupload and Megavideo), which lowered the supply of pirated content, increased digital revenues between 6.5% and 8.5% in the first 16 months after the shutdown went into effect.[81] Yue (2020) examines the impact of piracy on revenue loss in China and finds substantial average losses.[82] In addition, the author explores quantitatively the impacts of various policy measures on revenues (for example anti-piracy campaigns, and increased number of screens in China), finding they would significantly reduce the incidence of copyright infringement. Similarly, papers including Danaher et al. (2020) and Savelkoul (2020), consider the impact of the introduction of the HADOPI anti-piracy law in France on revenues of music artists, finding a sales increase of around 25% with larger impacts on superstars than for other artists.[83]

Similar effects have been documented with various types of media including books. Reimers (2016) finds an increase of 14% in sales when private companies actively monitor and deter access to pirated e-books.[84] Similarly, a modest increase in the costs of finding pirated content (such as through lowering the occurrence of infringing search results,[85] or blocking illegal sites[86]) can lead to consumers substituting legal content for pirated content.

Hughes and Smith (2024) survey the economics literature on the impacts of copyright infringement on authorized sales, assessing 34 peer-reviewed studies between 2003 and 2022 and find that in 29 of them there is statistically significant harm to sales (with no effect in the remaining five).[87] In the same study, they also examine the law literature and report contrasting findings with "half of all citations being to just one 2007 study finding no harm."

3.3.2–Impacts of piracy on creative production

The lack of protection can lower investment in riskier creative production. For example, Waldfogel and Telang (2018) find that VHS-based piracy, following the introduction of the VCR in India, results in the lowering of Bollywood studios' revenues, the number of Bollywood movies, and the quality of movies produced.[88] Danaher and Smith (2017) compare how the differential uptake of the BitTorrent protocol across countries impacted increased video piracy across countries.[89] Countries most impacted by piracy also had the sharpest reductions in the production of award-winning domestic films.[90]

In addition to lost revenue (and hence lowered creative production and employment), piracy may negatively impact trade competitiveness.[91] The U.S. Chamber of Commerce and NERA (2019) document billions of viewings of US-produced television and movies pirated outside of the US which they estimate lower domestic revenues between 11% and 24%.[92]

Despite the documented negative effects of piracy, determining how many resources to dedicate to combatting it is far from obvious. In Martinelli et al.'s (2022) agent-based model, stronger copyright enforcement has costs, but lowers piracy, raising returns to authors and increasing the incentive to create (though these effects should be weighed against impacts on consumers).[93]

3.4–Other Copyright Policy Considerations

Copyright protection has been found to benefit small businesses. In a panel of US start-ups during 2004–2011, Power and Reed (2021) find that out-licensing copyrights increases firm performance.[94] Country economic impact studies also highlight cases of IP broadly aiding businesses, start-ups, and research organizations to commercialize their innovations. Australia IP 2024 reports that "after filing for an IP right... SMEs are 16% more likely to experience high employment growth than their peers without recent filings."[95] The U.S. Chamber of Commerce's report, IP Stories: The Big Impact of IP on Small Businesses, provides case studies demonstrating how IP has benefited small businesses, and includes stories focusing on how copyright has helped motion picture industry entrepreneurs protect their original creations and earn income licensing various elements in films and merchandising.[96]

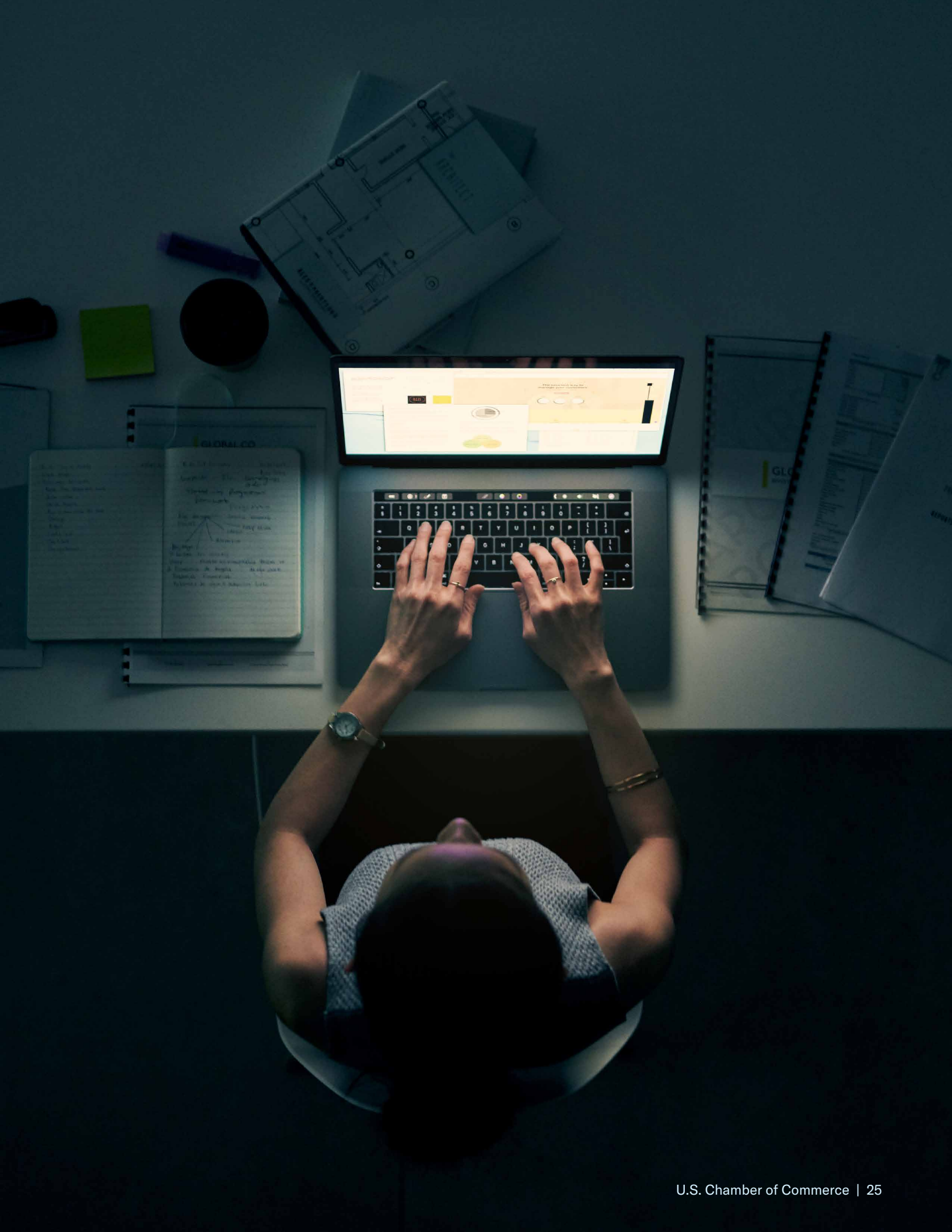
In addition, there are important socioeconomic elements to copyright, given the demographics of authors in copyright-reliant industries, and changes over time. For example, while in 1970 women produced only a third as many books as men, by 2020 women authors were the majority.[97]

4. Conclusion

There is significant economic activity associated with the sectors of the economy where copyright plays an important role. Trillions of dollars of economic activity and millions of jobs are associated with these sectors, globally. On average, these jobs tend to be good quality, with compensation higher than average. Beyond jobs and contribution to GDP, these sectors can also positively contribute to exports, in a context where digital services are increasingly traded. A wide-ranging set of studies has quantified the impacts associated with these industries more generally, as well as specific industries and individual productions.

A growing literature outlines the role that copyright enforcement can play in helping to realize some of the benefits outlined above. Numerous studies considering different contexts have established that increased enforcement can increase revenues to copyright holders, which can boost incentives for creation.

Copyright-intensive industries are socioeconomically fundamental, and a robust copyright ecosystem is vital for supporting, enabling, and benefitting the creative communities bolstering American society and the economy.



5. References

Airbnb, "Airbnb and Oxford Economics reveal the economic impact of major UK events," 2024.

Alejandro Zentner, "Measuring the Impact of File Sharing on the Movie Industry: An Empirical Analysis Using a Panel of Countries," (2010).

Americans for the Arts, "Arts and Economic Prosperity 6: The Economic& Social Impact Study of Nonprofit Arts & Culture Organizations & Their Audiences," 2022.

Anjana Padmanabhan, "The Economics of Creativity: A Q&A with the Copyright Office's Chief Economist," 2024.

Arianna Martinelli, et al, "Digitalization, copyright and innovation in the creative industries: an agent-based model," *LEM Papers Series*, No. 2022/03 (2022).

Bernadette Power and Gavin Reid, "The impact of intellectual property types on the performance of business start-ups in the United States," *International Small Business Journal*, 39(4) (2021) pp. 372–400.

Brett Danaher & Michael D. Smith, "Digital Piracy, Film Quality, and Social Welfare," 24 Geo. Mason L. Rev. 923 (2017).

Brett Danaher and Michael D. Smith. "Gone in 60 seconds: The impact of the Megaupload shutdown on movie sales," *International Journal of Industrial Organization*, 33 (2014) pp. 1–8.

Brett Danaher, Michael D. Smith, Rahul Telang and Siwen Chen, "The effect of graduated response anti-piracy laws on music sales: evidence from an event study in France," *Journal of Industrial Economics*, 62 (3) (2014) pp. 541–553.

Brett Danaher, Jonathan Samuel Hersh, Michael D. Smith, and Rahul Telang, "The effect of piracy website blocking on consumer behavior," (2019).

Bureau of Economic Analysis (BEA), "Arts and Cultural Production Satellite Account, 2021," 2021.

Bureau of Economic Analysis (BEA), "Regional Economic Accounts—Previously Published Estimates."

California Center for Jobs & the Economy, "Special Report: Taylor Swift's Impact on the Economy in Los Angeles County," 2023.

Census Bureau, "North American Industry Classification System," 2017.

Christian Peukert, and Margaritha Windisch, "The economics of copyright in the digital age," *Journal of Economic Surveys*, (2024) pp. 1–27.

Copyright.gov, "What is Copyright?"

David Blackburn, Jeffery Eisenach, and David Harrison, "Impacts of Digital Video Piracy on the U.S. Economy," NERA Economic Consulting and The U.S. Chamber of Commerce, 2019.

Diego Araujo Reis, Fábio Rodrigues de Moura and Iracema Machado de Aragão, "The Linkage between Input and Output in the Innovation Ecosystem," *Global Journal of Human-Social Science*, 21(H3) (2021) pp. 31–41.

John Manchester, "Downloading More Than Content: Malware and Piracy Sites," U.S. Chamber of Commerce, 2024.

Dotan Oliar and Christopher Jon Sprigman, "There's No Free Laugh (Anymore): The Emergence of Intellectual Property Norms and the Transformation of Stand-Up Comedy," *Virginia Law Review*, Vol. 94, (2008) No. 8.

EUIPO, "Economic impact of COVID-19 crisis in IPR-intensive industries," 2021.

IFPI, "Engaging with Music: 2021," 2021.

IIPA, "Copyright Industries in the U.S. Economy: 2022 Report," 2022.

IIPA, "Copyright industries in the U.S. economy."

Imke Reimers, "Can private copyright protection be effective? Evidence from book publishing," *The Journal of Law and Economics*, 59(2), (2016) pp. 411–440.

International Finance Corporation, "Sector: Creative Industries."

IP Australia, "Australian IP Report: 2024," 2024.

Jaci McDole, "IP Stories: The Big Impact of IP on Small Businesses," U.S Chamber of Commerce, 2024.

Jeeyeon (Jeannie) Hahm and Youcheng Wang, "Film-Induced Tourism as a Vehicle for Destination Marketing: Is it Worth the Efforts?" *Journal of Travel & Tourism Marketing*, (2011), pp. 165–179.

Joel Waldfogel, "How digitization has created a golden age of music, movies, books and television," *Journal of Economic Perspectives*, 31(3) (2017) pp. 195–214.

Joel Waldfogel, "The Welfare Effect of Gender-Inclusive Intellectual Property Creation: Evidence from Books," *NBER Working Paper* No. 30987 (2023).

Justin Hughes and Michael D., Smith "Do Copyright Professors Pay Attention to Economists? How Empirical Evidence on Copyright Piracy Appears (or Not) in Law Literature," *Journal of Law & the Arts, Research Paper No. 2023–04*, Vol. 47, No. 165 (2023).

Kelly Anderson, "How to Swiftly Energize Growth through Copyright Protection," U.S. Chamber of Commerce, 2024.

Liron Sivan, Michael D. Smith, and Rahul Telang, "Do Search Engines Influence Media Piracy? Evidence from a Randomized Field Study," *Management Information Systems Quarterly*, 43(4) (2019) pp. 1143–1154.

Luis Aguiar and Joel Waldfogel, "Even the losers get lucky sometimes: New products and the evolution of music quality since Napster," *Information Economics and Policy*, Volume 34 (2016) pp. 1–15.

Megan MacGarvie and Petra Moser, "Copyright and the Profitability of Authorship—Evidence from Payments to Writers in the Romantic Period," *National Bureau of Economic Research*, No. w19521 (2013) pp. 357–379.

Michela Giorcelli and Petra Moser, "Copyrights and creativity: Evidence from Italian opera in the Napoleonic age," *Journal of Political Economy* 128, no. 11 (2020) pp. 4163–4210.

MPA, "The American Motion Picture and Television Industry Creating Jobs, Trading Around the World," 2021.

MPA, "The American Motion Picture and Television Industry, Creating Jobs, Trading Around the World," 2022.

OECD, "Structural Analysis (STAN) Database."

Oxford Economics, "Digital services in Europe: An Evidence Review," 2020.

Oxford Economics, "Economic impacts of Pitch Perfect: Bumper in Berlin in Germany," 2024.

Oxford Economics, "The economic contribution of Mexico's audiovisual industry," 2024.

Oxford Economics, "The economic impact of public radio's music activities," 2020.

Oxford Economics, "The economic impact of the sports activities of public service media," 2024.

Oxford Economics, "The State of the Creator Economy: Assessing the Economic, Cultural, and Educational Impact of YouTube in the US in 2022," 2023.

Oxford Economics, "The State of the Creator Economy: Assessing the Economic, Cultural, and Educational Impact of YouTube in the US in 2022," 2023.

Oxford Economics, "The TikTok Effect," 2023.

Oxford Economics, "The Concerts and Live Entertainment Industry: A Significant Economic Engine," 2021.

Oxford Economics, "The economic contribution of Brazil's audiovisual industry in 2019," 2022.

Oxford Economics, "The UK Creative Industries: unleashing the power and potential of creativity," 2021.

Oxford Economics, "Value Study of GLAMs in Canada," 2019.

Rahul Telang and Joel Waldfogel, "Piracy and new product creation: A Bollywood story," *Information Economics and Policy*, 43 (2018) pp. 1–11.

RIAA, "Statement of Recording Industry Association of America (RIAA) before the United States International Commission," 2017.

Richard Florida, "Cities and the Creative Class," *City & Community*, 2:1 p. 8, 2003.

Richard Florida, "The rise of the creative class," Vol. 9. New York: Basic books, 2002.

Richard Gilbert, "Innovation Matters: Competition Policy for the High-Technology Economy," MIT Press, 2020.

Ruben Savelkoul, "Superstars vs the long tail: How does music piracy affect digital song sales for different segments of the industry?" *Information Economics and Policy*, Volume 50 (2020) p. 100847.

Sue Beeton, "Understanding film-induced tourism," *Tourism analysis* 11, (2006) pp. 181–188.

Szlobodan Vukoszavlyev, "The connection between global innovation index and economic well-being indexes," *Applied Studies in Agribusiness and Commerce*, 13(3–4) (2019) pp. 87–92.

U.S. Chamber of Commerce, "International Cover IP Index: 2024 Twelfth Edition," 2024.

U.S. Chamber of Commerce, "Statistical Annex," 2024.

U.S. Copyright Office, "The Resilience of Creativity: An Examination of the COVID-19 Impact on Copyright-Reliant Industries and Their Subsequent Recovery," p. 10, 2022.

U.S. Travel Association, "The Taylor Swift Impact—5 months and $5+Billion," 2023.

UK DCMS, "Guidance: DCMS Sector Economic Estimates Methodology," 2022.

UK Government, "Creative Industries Mapping Documents 2001: Demonstrating the success of our creative industries," Department for Digital, Culture, Media & Sport, 2001.

UK Intellectual Property Office, "Use of Intellectual Property rights across UK industries," 2022.

UNCTAD, "Creative Economic Outlook," 2022.

UNESCO Creative Cities Network, "Mission Statement," 2023.

UNESCO, "Re-shaping policies for creativity: Addressing culture as a global public good," 2022.

UNESCO, "UNESCO creative cities."

United Nations, "New Economics for Sustainable Development—Creative Economy."

United States International Trade Commission, "Digital Trade in the U.S. and Global Economies, Part 2," 2014.

U.S. Copyright Office, "General Revision of the U.S. Copyright Laws," 1961.

U.S. Copyright Office, "The Resilience of Creativity: An Examination of the COVID-19 Impact on Copyright-Reliant Industries and Their Subsequent Recovery."

WIPO, "Global Innovation Index."

WIPO, "The Economic Contribution of the Copyright Industries," 2021.

WIPO, "The Economic Impact of Canada's Copyright-Based Industries," 2020.

Yang Yue, "The effects of movie piracy on box-office revenue: an empirical analysis of the Chinese movie market," *Journal of Applied Economics*, 23(1) (2020) pp. 618–655.

Zhiwei Zhu, "Research on the Effect of Copyright system on the Development of Creative Industries," Frontiers in Business, Economics and Management, 9(1), (2023) pp. 155–158.

6. Endnotes

1 The idea that temporary monopoly profits can be a driver of innovation has been associated with economist Joseph Schumpeter, whereas Kenneth Arrow has argued that innovation is driven by competition. See for example, Richard Gilbert, "Innovation Matters: Competition Policy for the High-Technology Economy," MIT Press, 2020, at chapter 3 "Competition and Innovation Basics: Arrow versus Schumpeter."

2 Available here. While this dataset is comprehensive, copyright information across countries is not readily available. A useful exercise for copyright research would be to record each country's level of copyright protection over time in terms of key attributes such as scope, term length, and exemptions.

3 Copyright.gov, "What is Copyright?"

4 U.S. Copyright Office, "The Resilience of Creativity: An Examination of the COVID-19 Impact on Copyright-Reliant Industries and Their Subsequent Recovery."

5 Oxford Economics, "The Concerts and Live Entertainment Industry: A Significant Economic Engine," 2021. More recently, Oxford Economics and Airbnb have estimated that major concert events (such as the Taylor Swift 'Eras' tour) contributed a combined £36 million to UK GDP. Airbnb, "Airbnb and Oxford Economics reveal the economic impact of major UK events," 2024.

6 U.S. Travel Association, "The Taylor Swift Impact—5 months and $5+Billion," 2023.

7 California Center for Jobs & the Economy, "Special Report: Taylor Swift's Impact on the Economy in Los Angeles County," 2023.

8 Anjana Padmanabhan, "The Economics of Creativity: A Q&A with the Copyright Office's Chief Economist," Library of Congress Blogs, April 23, 2024

9 Christian Peukert, and Margaritha Windisch, "The economics of copyright in the digital age," *Journal of Economic Surveys*, 1–27, 2024

10 U.S. Copyright Office, "The Resilience of Creativity: An Examination of the COVID-19 Impact on Copyright-Reliant Industries and Their Subsequent Recovery."

11 Note: Industries correspond to the 2017 NAICS classification. See Census Bureau, "North American Industry Classification System," 2017.

12 Zhiwei Zhu, "Research on the Effect of Copyright System on the Development of Creative Industries," *Frontiers in Business, Economics and Management*, 9(1), (2023) pp. 155–158.

13 UK Government, "Creative Industries Mapping Documents 2001: Demonstrating the success of our creative industries," Department for Digital, Culture, Media & Sport, 2001.

14 The United Nations Conference on Trade and Development (UNCTAD) recognizes that, "the creative industries… are the cycles of creation, production and distribution of goods and services that use creativity and intellectual capital as primary inputs… generating revenues from trade and intellectual property rights." United Nations, "New Economics for Sustainable Development—Creative Economy."

15 UK DCMS, "Guidance: DCMS Sector Economic Estimates Methodology," 2022.

16 The U.S. Patent and Trademark Office has its own Chief Economist whereas Dr. Brent Lutes in the USCO serves as Chief Economist and works exclusively on the economics of copyright.

17 US figures are from the International Intellectual Property Alliance (IIPA), a coalition of trade associations representing US copyright-based industries, which first measured the economic impact of the copyright industries on the US economy in 1990 and have regularly updated it ever since. IIPA, "Copyright industries in the U.S. economy."

18 WIPO, "The Economic Contribution of the Copyright Industries," 2021.

Note: The 2024 Report was released after research for this project was completed.

19 IIPA, "Copyright Industries in the U.S. Economy: 2022 Report," 2022.

Note: The 2024 Report was released after research for this project was completed.

20 EUIPO, "Economic impact of COVID-19 crisis in IPR-intensive industries," 2021.

21 UK Intellectual Property Office, "Use of Intellectual Property rights across UK industries," 2022.

22 Contribution to non-financial Gross Value-added.

23 WIPO, "The Economic Impact of Canada's Copyright-Based Industries," 2020.

24 IP Australia, "Australian IP Report: 2024," 2024.

25 OECD, "Structural Analysis (STAN) Database."

26 Bureau of Economic Analysis (BEA), "Regional Economic Accounts—Previously Published Estimates."

27 Bureau of Economic Analysis (BEA), "Arts and Cultural Production Satellite Account," 2021.

28 IIPA, "Copyright industries in the U.S. Economy: 2022 Report," 2022.

Note: The 2024 Report was released after research for this project was completed.

29 For a similar analysis, see Figure 4, U.S. Copyright Office, "The Resilience of Creativity: An Examination of the COVID-19 Impact on Copyright-Reliant Industries and Their Subsequent Recovery," p. 10, 2022.

30 Analysis is modeled on that see Figure 4, U.S. Copyright Office, "The Resilience of Creativity: An Examination of the COVID-19 Impact on Copyright-Reliant Industries and Their Subsequent Recovery," p. 10, 2022.

31 IIPA, "Copyright industries in the U.S. Economy: 2022 Report," 2022.

Note: The 2024 Report was released after research for this project was completed.

32 *The UNESCO Courier*, "Culture: at the heart of Sustainable Development Goals," April 11, 2017.

33 International Finance Corporation (IFC), "Sector: Creative Industries."

34 UNESCO, "Re-shaping policies for creativity: Addressing culture as a global public good," 2022.

35 UNCTAD, "Creative Economic Outlook," 2022.

36 Richard Florida, "The rise of the creative class," Vol. 9. New York: Basic books, 2002.

37 Richard Florida, "Cities and the Creative Class," *City & Community*, 2:1 p. 8, 2003.

38 As previous footnote.

39 UNESCO, "UNESCO creative cities."

40 Specifically, the UNESCO Creative Cities Network covers "Crafts and Folk Art, Design, Film, Gastronomy, Literature, Media Arts, and Music." UNESCO Creative Cities Network, "Mission Statement," 2023.

41 IPR infringement remains an obstacle to digital trade. For example, 34% of large firms in the content sector and 27% of small and medium enterprises in the communication sector view IPR infringement as a "substantial or very substantial" obstacle for international trade. United States International Trade Commission, "Digital Trade in the U.S. and Global Economies, Part 2," 2014.

42 IIPA, "Copyright industries in the U.S. Economy: 2022 Report," 2022.

Note: The 2024 Report was released after research for this project was completed.

43 UNCTAD, "Creative Economic Outlook," 2022.

44 MPA, "The American Motion Picture and Television Industry, Creating Jobs, Trading Around the World," 2022.

45 Oxford Economics, "The State of the Creator Economy: Assessing the Economic, Cultural, and Educational Impact of YouTube in the US in 2022," 2023.

46 Oxford Economics, "Economic impacts of Pitch Perfect: Bumper in Berlin in Germany," 2024.

47 See for example, Jeeyeon (Jeannie) Hahm and Youcheng Wang, "Film-Induced Tourism as a Vehicle for Destination Marketing: Is it Worth the Efforts?" *Journal of Travel & Tourism Marketing*, (2011), pp. 165–179, or Sue Beeton, "Understanding film-induced tourism," *Tourism analysis* 11, (2006) pp. 181–188.

48 Carol Pinchefsky, "The Impact (Economic and Otherwise) of Lord of the Rings/ The Hobbit on New Zealand," *Forbes*, December 14, 2012.

49 Unlike Table 2, this table reports not only the size of the sector itself, but also the value of its entire footprint, including supply chains and the consumer-facing industries supported through wage-spending.

50 Oxford Economics, "The economic contribution of Mexico's audiovisual industry," 2024.

51 Oxford Economics, "The economic contribution of Brazil's audiovisual industry in 2019," 2022.

52 EU+ refers to the EU-27, the UK, Norway, Switzerland, and Türkiye.

53 Oxford Economics, "The economic impact of the sports activities of public service media," 2024.

54 Oxford Economics, "The economic impact of public radio's music activities," 2020.

55 Oxford Economics, "Digital services in Europe: An Evidence Review," 2020.

56 Oxford Economics, "The State of the Creator Economy: Assessing the Economic, Cultural, and Educational Impact of YouTube in the US in 2022," 2023.

57 Oxford Economics, "The UK Creative Industries: unleashing the power and potential of creativity," 2021.

58 Oxford Economics, "The TikTok Effect," 2023.

59 Oxford Economics, "Value Study of GLAMs in Canada," 2019.

60 The report uses the concept of total economic value to quantify the impact, rather than input-output modeling built off the national accounts.

61 MPA, "The American Motion Picture and Television Industry Creating Jobs, Trading Around the World," 2021 "Compensation" includes wages and benefits whereas "wage" includes only wages paid to employees.

62 Americans for the Arts, "Arts and Economic Prosperity 6: The Economic & Social Impact Study of Nonprofit Arts & Culture Organizations & Their Audiences," 2022.

63 Americans for the Arts, "Arts and Economic Prosperity 6."

64 "[The Congress shall have Power...] To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."

65 U.S. Copyright Office, "General Revision of the U.S. Copyright Laws," 1961.

66 U.S. Chamber of Commerce, "International IP Index: 2024, 12th Edition," 2024.

Note: The 2025, 13th Edition of the IP Index was released after research for this project was completed.

67 For example, the 2024 report notes efforts in Brazil to disable set-top boxes, and Saudi Arabia and Egypt disabling access to various websites. U.S. Chamber of Commerce, "International Cover IP Index: 2024 Twelfth Edition," p. 11, 2024.

68 Kelly Anderson, U.S. Chamber of Commerce, "How to Swiftly Energize Growth through Copyright Protection," 2024.

69 U.S. Chamber of Commerce, "International IP Index: 2024, 12th Edition," Statistical Annex, 2024.

Note: The 2025, 13th Edition of the IP Index was released after research for this project was completed. The 2025 Statistical Annex is forthcoming as of publication.

70 WIPO, "Global Innovation Index."

71 WIPO, "The Economic Contribution of the Copyright Industries," 2021.

72 Diego Araujo Reis, et al, "The Linkage between Input and Output in the Innovation Ecosystem," *Global Journal of Human-Social Science*, 21(H3) (2021) pp. 31–41.

73 Szlobodan Vukoszavlyev, "The connection between global innovation index and economic well-being indexes," *Applied Studies in Agribusiness and Commerce*, 13(3–4) (2019) pp. 87–92.

74 We note, however, that various factors may counter the linkages illustrated. For example, copyright may lower the supply of new works if existing works are important in the creation of new works ("re-use"). In addition, beyond the monetary incentive, there are additional (both intrinsic and extrinsic) returns from creation in the form of reputation, utility from production itself, etc. These is also a literature on norms or other conventions that may substitute for copyright protections. Dotan Oliar and Christopher Jon Sprigman, "There's No Free Laugh (Anymore): The Emergence of Intellectual Property Norms and the Transformation of Stand-Up Comedy," *Virginia Law Review*, Vol. 94, No. 8, 2008.

75 Michela Giorcelli and Petra Moser, "Copyrights and creativity: Evidence from Italian opera in the Napoleonic age," *Journal of Political Economy* 128, no. 11 (2020) pp. 4163–4210.

76 Megan MacGarvie and Petra Moser, "Copyright and the Profitability of Authorship—Evidence from Payments to Writers in the Romantic Period," National Bureau of Economic Research, No. w19521 (2013) pp. 357–379.

77 John Manchester, "Downloading More Than Content: Malware and Piracy Sites," U.S. Chamber of Commerce, 2024, referencing Digital Citizens Alliance, "Unholy Triangle," 2022.

78 Luis Aguiar and Joel Waldfogel, "Even the losers get lucky sometimes: New products and the evolution of music quality since Napster," Information Economics and Policy, Volume 34 (2016) pp. 1-15. See also Joel Waldfogel, "How digitization has created a golden age of music, movies, books and television," *Journal of Economic Perspectives*, 31(3) (2017) pp. 195–214.

79 IFPI, "Engaging with Music: 2021," 2021.

80 David Blackburn, Jeffery Eisenach, and David Harrison, "Impacts of Digital Video Piracy on the U.S. Economy," NERA Economic Consulting and the U.S. Chamber of Commerce, 2019.

81 Brett Danaher and Michael D. Smith. "Gone in 60 seconds: The impact of the Megaupload shutdown on movie sales," *International Journal of Industrial Organization*, 33 (2014) pp. 1–8.

82 Yang Yue, "The effects of movie piracy on box-office revenue: an empirical analysis of the Chinese movie market," *Journal of Applied Economics*, 23(1) (2020) pp. 618–655.

83 Brett Danaher et al, "The effect of graduated response anti-piracy laws on music sales: evidence from an event study in France," *Journal of Industrial Economics*, 62 (3) (2014) pp. 541–553. Ruben Savelkoul, "Superstars vs the long tail: How does music piracy affect digital song sales for different segments of the industry?" *Information Economics and Policy*, Volume 50 (2020) p. 100847.

84 Imke Reimers, "Can private copyright protection be effective? Evidence from book publishing," *The Journal of Law and Economics*, 59(2), (2016) pp. 411–440.

85 Liron Sivan, Michael D. Smith, and Rahul Telang, "Do Search Engines Influence Media Piracy? Evidence from a Randomized Field Study," *Management Information Systems Quarterly*, 43(4) (2019) pp. 1143–1154.

86 Brett Danaher et al, "The effect of piracy website blocking on consumer behavior," (2019).

87 Justin Hughes and Michael D., Smith "Do Copyright Professors Pay Attention to Economists? How Empirical Evidence on Copyright Piracy Appears (or Not) in Law Literature," *Journal of Law & the Arts, Research Paper No. 2023-04*, Vol. 47, No. 165 (2023)

88 Rahul Telang and Joel Waldfogel, "Piracy and new product creation: A Bollywood story," *Information Economics and Policy*, 43 (2018) pp. 1–11.

89 Alejandro Zentner, "Measuring the Impact of File Sharing on the Movie Industry: An Empirical Analysis Using a Panel of Countries," (2010).

90 Brett Danaher & Michael D. Smith, "Digital Piracy, Film Quality, and Social Welfare," 24 Geo. Mason L. Rev. 923 (2017).

91 RIAA, "Statement of Recording Industry Association of America (RIAA) before the United States International Commission," 2017. "Trade in ICT goods and services has in turn become a significant driver of U.S. trade competitiveness, not only fueling global digital trade, but also fueling great data flows. For example, as the United Nations Conference on Trade and Development (UNCTAD) estimates, 50 percent of all traded services are enabled by the technology sector, including by cross-border data flows." At p. 12.

92 David Blackburn, Jeffery Eisenach, and David Harrison, "Impacts of Digital Video Piracy on the U.S. Economy," NERA Economic Consulting and the U.S. Chamber of Commerce, 2019.

93 Arianna Martinelli, et al, "Digitalization, copyright and innovation in the creative industries: an agent-based model," *LEM Papers Series*, No. 2022/03 (2022).

94 Bernadette Power and Gavin Reid, "The impact of intellectual property types on the performance of business start-ups in the United States," *International Small Business Journal*, 39(4) (2021) pp. 372–400.

95 IP Australia, "Australian IP Report: 2024," (2024) p. 10.

96 Jaci McDole, "IP Stories: The Big Impact of IP on Small Businesses," U.S Chamber of Commerce, 2024.

97 Joel Waldfogel, "The Welfare Effect of Gender-Inclusive Intellectual Property Creation: Evidence from Books," *NBER Working Paper* No. 30987 (2023).

U.S. Chamber of Commerce