2020 City of Denver Creative Economy Report
with Initial Impacts of the COVID-19 Crisis

Lisa Gedgaudas
Program Administrator, Create Denver
Denver Arts & Venues, City of Denver

Prepared by:

Dr. Michael Seman
Colorado State University
LEAP Institute for the Arts
Regional Economic Development Institute

Table of Contents

Executive Summary....ii

Introduction 1

Creative Industries Employment 1

Creative Occupations Employment 3

Rising Regional Housing Costs and Creative Occupations.... 4

Creative Industries Revenue 6

Initial Impacts of the COVID-19 Crisis 7

Background 7

Impacts.... 8

Conclusion.... 9

Acknowledgements.... 11

Appendix: Methodology 13

References 19

Executive Summary

The creative economy is robust and growing in the Denver metropolitan region. This report examines the scale, scope, and growth of Denver's creative economy offering details regarding employment trends and sales revenue over a nine-year period from 2010 to 2019. Some key data points and observations include the following:

Employment

- The Denver metropolitan region's creative industries support 96,358 jobs and there are 88,217 employed in creative occupations across multiple industries within the region. Employment in the region's creative industries grew by 29% between 2010 and 2019 with an addition of 21,546 jobs. Employment in creative occupations grew by 28% in the same time period with an addition of 19,429 jobs.
- The top five clusters of creative industries in the Denver metropolitan region by employment in 2019 include Music, Theater, Dance, and Visual Arts (33,776 jobs), Design and Advertising (14,072 jobs), Architecture and Living Spaces (11,965 jobs), Creative Technology (11,951 jobs), and Film, Television, and Radio (10,252 jobs).
- The top five clusters of creative industries in the Denver metropolitan region with the greatest growth in employment from 2010 to 2019 include Creative Technology (77%), Architecture and Living Spaces (47%), Music, Theater, Dance, and Visual Arts (43%), Culture and Heritage (41%), Design and Advertising (25%).

Revenue

- Creative industries in the Denver metropolitan region produced $16.2 billion in sales of goods and services (sales revenue) in 2019 which represents 4% of all goods and services sold within the region.
- The top 3 clusters of creative industries in the Denver metropolitan region by sales of goods and services (sales revenue) in 2019 include Creative Technology ($4.8 billion), Film, Television, and Radio ($4.0 billion), and Design and Advertising ($1.9 billion).

Rising Regional Housing Costs and Creative Occupations

- Employment in creative occupations grew in the Denver metropolitan region despite escalating housing costs.
- Average rent in the Denver metropolitan region rose from $898 to $1,660 between 2010 and 2019, while the median home price more than doubled from $211,000 to $431,000 – increases of 85% and 104% respectively.
- Creative occupation employment grew 16% between 2010 to 2015 when average rent growth sharply escalated and peaked in the Denver metropolitan region and 10% between 2015 and 2019 when average rent was hovering at or just below its peak rate and real estate valuations substantially escalated.

- Employment in the Fine Artists occupation – which includes painters, sculptors, illustrators, and others – grew 38% from 2010 to 2015 and 11% from 2015 to 2019.
- Denver policymakers should still monitor issues concerning housing costs and creative workers and find ways to help the region's creative economy to grow sustainably, paying special attention to "Do-it-Yourself" (DIY) arts communities that are youth-driven as they help incubate creative economy activity.

Initial Impacts of the COVID-19 Crisis

- The Denver metropolitan region's creative industries will lose an estimated 29,840 jobs and $1.4 billion in sales revenue between April and July 2020 due to the COVID-19 crisis. This four-month period of estimated losses will contract the region's creative economy by 31% in terms of employment and 9% in annual sales revenue.
- The Music, Theater, Dance, and Visual Arts industry cluster is responsible for the majority of losses due to the COVID-19 crisis. The cluster is estimated to lose 16,559 jobs and $469 million in sales revenue between April and July. This represents just over half of all estimated jobs lost and 33% of all estimated sales revenue lost in the region's creative industries during the time period.

Introduction

The creative economy is the collection of firms, establishments, and workers within a region that are immersed in the fields of design, music, fine art, film and video, fashion, dance, literature and more. A creative economy produces the arts and culture that enriches the lives of a region's residents, but its power extends beyond that. A robust creative economy helps attract and retain a highly skilled workforce within a region while also helping drive a region's overall knowledge economy, often while intertwined with efforts in the science and technology industries.[1]

Innovation and entrepreneurship are second nature to those driving the creative economy and their work increasingly blurs industry boundaries. A "creative mindset" encompasses those working individually on projects in the fine arts like painting, ceramics, or photography, as well as teams leveraging digital technology while collaborating across industries like design, engineering, information technology, and filmmaking. Firms that embrace this mindset are noted to "outperform peers and competitors on key business performance indicators, including revenue growth, market share, and talent acquisition."[2]

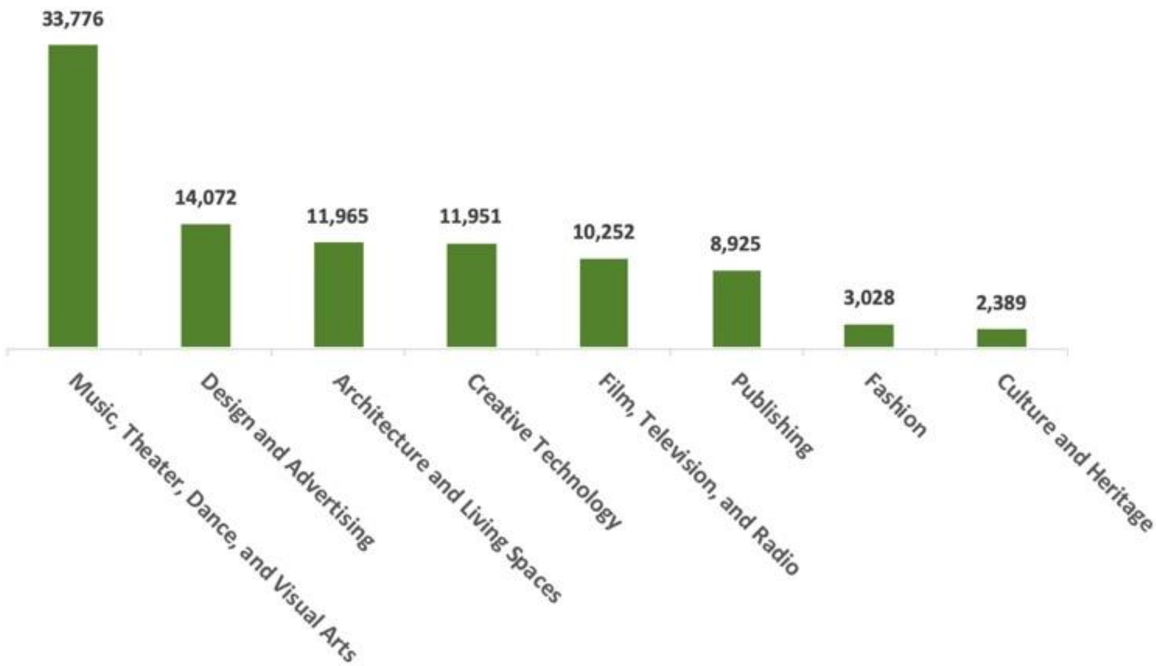
A region's creative economy consists of two parts – creative industries and creative occupations. The creative industries are comprised of the firms and establishments responsible for goods and services from films and concerts to advertising campaigns and fashion collections. Employment in the creative industries includes everyone at a firm or establishment – whether in a creative occupation or not – plus the self-employed, and those who work freelance. Creative occupations represent a region's core creative workforce, e.g., graphic designers, architects, video editors, archivists, musicians, etc. who drive the firms and establishments in the creative industries, but also can be found employed in other industries like education, health care, or aerospace.

The Denver metropolitan region experienced substantial growth in the past decade, so too did its creative economy. This report briefly examines that growth, how Denver's shifting real estate economics have affected it, and the initial impacts the COVID-19 crisis may have on it.

Creative Industries Employment

Employment in the Denver metropolitan region's creative industries is substantial with 96,538 jobs spread across eight industry clusters. This figure represents just over 50% of all employment in creative industries statewide. The Music, Theater, Dance, and Visual Arts industry cluster is driven by Denver's robust music industry, but also includes those who are dedicated to the creation, management, and promotion of art, theater, dance, photography, and other fine and performing arts within the region. The industry cluster leads all others in employment by a wide margin providing just over 33,000 jobs while the Design and Advertising cluster is a distant second, responsible for 14,072 jobs in various fields of design, advertising, and public relations (Figure 1).

Figure 1. Creative Industries Employment by Industry Cluster: 2019



Total Jobs: 96,358

Source: EMSI (via Denver Arts & Venues and Denver Economic Development & Opportunity)

Denver's creative industries experienced strong growth between 2010 and 2019 with almost 22,000 jobs added representing a 29% increase (Table 1). The technology industry's strength in the Denver metropolitan region is reflected in the Creative Technology cluster's 77% increase in employment between 2010 and 2019 which added 5,203 jobs supporting the development of software and online platforms related to gaming, social media, sports, news, and lifestyle content.

Explosive population growth in the region is mirrored by the 47% growth of the Architecture and Living Spaces cluster which contains the firms, establishments, and individuals responsible for designing commercial and residential spaces throughout the region. Employment growth in the Music, Theater, Dance, and Visual Arts cluster was less explosive with a 43% increase between 2010 and 2019, but in absolute numbers, it outstripped the two clusters ahead of it by adding 10,188 jobs. The only cluster that contracted is Publishing which lost almost 3,200 jobs. This is a result of traditional forms of media like newspapers and magazines losing readership and advertising revenue to an ever-increasing array of online options (Table 1).

Table 1. Creative Industries Employment Growth by Industry Cluster: 2010 - 2019

Industry Cluster	2010 Jobs	2019 Jobs	2010 – 2019 Change	% Change
Creative Technology	6,748	11,951	5,203	77%
Architecture and Living Spaces	8,162	11,965	3,803	47%
Music, Theater, Dance, and Visual Arts	23,588	33,776	10,188	43%
Culture and Heritage	1,697	2,389	692	41%
Design and Advertising	11,261	14,072	2,811	25%
Film, Television, and Radio	8,414	10,252	1,838	22%
Fashion	2,819	3,028	209	7%
Publishing	12,123	8,925	-3,198	-26%
Totals	**74,812**	**96,358**	**21,546**	**29%**

Source: EMSI (via Denver Arts & Venues and Denver Economic Development & Opportunity)

Creative Occupations Employment

Employment growth in the creative occupations at the core of the Denver metropolitan region's creative economy kept pace with growth in the creative industries with 19,429 jobs added between 2010 and 2019 representing a 28% growth in employment (Table 2).

Table 2. Creative Economy Employment Growth by Occupation and Industry: 2010 - 2019

	2010 Jobs	2019 Jobs	2010 – 2019 Change	% Change
Employment: Creative Occupations	68,788	88,217	19,429	28%
Employment: Creative Industries	74,812	96,358	21,546	29%

Source: EMSI (via Denver Arts & Venues and Denver Economic Development & Opportunity), U.S. Bureau of Labor Statistics

Examining the top ten creative occupations in the Denver metropolitan region offers more insight in the dynamics of its creative economy. The list is dominated by occupations that engage with the fine and performing arts including photographers, writers, sculptors, musicians, and others. Graphic designers, marketing managers, and those who work in public relations are also represented. Finally, the rapid growth in population and the built environment within the region is reflected with the substantial number of architects and interior designers that are employed. (Table 3).

Table 3. Top Ten Creative Occupations by Employment: 2019

Rank	Occupation	Jobs
1	Photographers	12,792
2	Graphic Designers	6,401
3	Writers and Authors	6,385
4	Musicians and Singers	5,497
5	Public Relations Specialists	3,892
6	Architects, Except Landscape and Naval	3,850
7	Marketing Managers	3,663
8	Fine Artists, including Painters, Sculptors, and Illustrators	2,845
9	Interior Designers	2,795
10	Editors	2,412

Source: EMSI (via Denver Arts & Venues and Denver Economic Development & Opportunity), U.S. Bureau of Labor Statistics

Rising Regional Housing Costs and Creative Occupations

The Denver metropolitan region's sizable growth in population, booming economy, precipitous rise in housing costs, and the combination thereof between 2010 and 2019 transformed large swaths of the city's urban landscape. This continues to cause concern amongst those who participate in the region's creative economy and the local policymakers who address it. Like many cities in the western United States, the city of Denver experienced a spectacular upward trend in average rental rates and real estate valuations – a challenging situation for some in the creative sector who tend to make well below the median income for a given region. For example, the average of the median annual earnings for all occupations in the Denver metropolitan region is $55,991 while the median annual earnings for occupations such as Fine Artists ($19,250), Dancers ($32,783), and Musicians and Singers ($45,983) are much lower.[3] Average rent in the Denver metropolitan region rose from $898 to $1,660 between 2010 and 2019, while the median home price more than doubled from $211,000 to $431,000 – increases of 85% and 104% respectively. Nationwide, average rents only increased 36% and median home prices 31% in the same time period. Between 2010 and 2017, Denver's robust increase in average rent ranked fourth place nationally, with only three cities in California's Bay Area – San Jose, Oakland, and San Francisco – registering higher increases.[4]

The rapid rise in housing costs, influx of population, and large clusters of properties viable for redevelopment created a perfect storm for real estate developers to launch new projects to the extent that entire neighborhoods were and continue to be reimagined, eliciting claims of gentrification from many throughout the region including those marginalized by this activity.[5] Many participants in the Denver metropolitan region's arts scene have voiced their concern regarding this shifting economic landscape, especially in the city of Denver. Some artists in Denver's "Do-it-Yourself" (DIY) scene feel left behind as the physical nexus of their activities, the River North (or "RiNo") neighborhood, all but disappeared for them as the officially-sanctioned River North Arts District emerged, formalizing much of the arts activity in the area while developers concurrently redeveloped it. Similarly, artists, gallery owners, and arts organizations who make their home in the Arts District on Santa Fe are finding escalating real estate values and their associated property taxes prohibitive, forcing some to close and others to relocate.[6]

Despite this narrative, the Denver metropolitan region continues to attract those who pursue creative occupations. It is important to look at growth in creative occupations for two time periods to gain a better understanding of this trend. The first period, 2010 to 2015, captures when average rent growth sharply escalated and peaked in the Denver metropolitan region. The second period, from 2015 to 2019, examines growth in the time when average rent was hovering at or just below the peak rate and real estate values substantially escalated.[7]

Employment growth in all creative occupations is 6% higher between 2010 and 2015 then it is in the following four years which points to a slowdown occurring during the time when housing costs were at their highest in the nine-year period examined. This is also true for four of the six specific creative occupations selected for observation. Of note is the Fine Artists occupation which includes painters, sculptors, and illustrators. In this case, despite the reported economic marginalization of those who self-identify as traditional fine artists between 2015 and 2019, jobs in those artistic disciplines continued to grow within the Denver region. In the case of Craft Artists who work with fibers, glass, ceramics and other mediums and Graphic Designers, employment growth between 2015 and 2019 actually outperformed employment growth between 2010 and 2015 (Table 4).

Table 4. Creative Occupations Growth: 2010-2015; 2015-2019

Occupation	2010 Jobs	2015 Jobs	2019 Jobs	2010 – 2015 % Change	2015 – 2019 % Change
All Occupations	68,788	79,888	88,217	16%	10%
Fine Artists	1,858	2,571	2,845	38%	11%
Writers and Authors	4,243	5,765	6,385	36%	11%
Producers and Directors (Film and TV)	1,238	1,523	1,774	23%	17%
Craft Artists	1,051	1,224	1,453	16%	19%
Graphic Designers	5,175	5,718	6,401	11%	12%
Musicians and Singers	4,468	5,198	5,497	16%	6%

Source: EMSI (via Denver Arts & Venues and Denver Economic Development & Opportunity), U.S. Bureau of Labor Statistics

Although more research is needed, escalating housing costs may have played a role in dampening creative occupation employment growth in the Denver metropolitan region between 2015 and 2019; however, growth in employment still took place. Even when housing costs were starting their precipitous rise in the Denver region during the 2010 to

2015 time period, strong employment growth in creative occupations is evident. The changes in Denver's population and urban landscape have at times proved challenging to the creative fabric of the region, but they have also provided for new influencers, creators, and audiences to flourish.

It is important not to discount the effect escalating rental rates and real estate valuation can have on artistic communities and those who work in creative occupations. The organic, DIY arts communities that often fly just under the radar of local policymakers and thrive in areas where space to live and create is inexpensive are especially vulnerable to urban redevelopment and associated increases in rent and real estate values. These youth-driven communities often play the role of incubator for many who are employed in a creative occupation or will eventually enter into one and are captured in the data used in this report. It has been and continues to be extremely vital that Denver metropolitan region policymakers and leaders continue to monitor this situation and find ways to support, defend, advocate for, and provide opportunities to help grow the creative economy more sustainably.

Creative Industries Revenue

The Denver metropolitan region's creative industries are responsible for $16.2 billion in sales of goods and services (Table 5). This figure represents 4% of all goods and services sold within the region. The Creative Technology industry cluster outperformed all other clusters with almost $5 billion in revenue while the Film, Television, and Radio cluster holds the second spot with $4 billion in revenue. The performance of the Film, Television, and Radio cluster is due largely to sales attributed to the region's television and radio industries as the film industry within the region (and statewide) continues to be challenged by competitive incentive programs offered by other regions across the country.[8]

Efforts are underway to address the film industry at the state-level and in the Denver region with the goal of developing policy and programs that would help strengthen core assets already present, create new opportunities for filmmakers regionally (and beyond the creative industries), and lessen the reliance on attracting major productions from outside the state. As it stands, Denver's film industry comprises the majority of employment and sales for the industry in all of Colorado. Added attention from Denver Arts & Venues will help to increase this share and possibly influence an uptick in the industry in other regions. Denver Arts & Venues performed similar work with the region's music industry issuing a music strategy, forming the Denver Music Advisory Panel, and establishing the Denver Music Advancement Fund, a public-private joint effort which to date has distributed over $200,000 in grants to music industry participants and projects.

Table 5. Sales Revenue by Creative Industry Cluster: 2019

Industry Cluster	Sales Revenue
Creative Technology	$4,857,541,790
Film, Television, and Radio	$4,045,189,193
Design and Advertising	$1,963,772,372
Music, Theater, Dance, and Visual Arts	$1,936,706,736
Architecture and Living Spaces	$1,721,689,049
Publishing	$1,183,107,587
Culture and Heritage	$270,082,066
Fashion	$250,248,497
Total	$16,228,337,290

Source: EMSI (via Denver Arts & Venues and Denver Economic Development & Opportunity)

Other industry clusters that performed well in 2019 include Design and Advertising, Music, Theater, Dance, and Visual Arts, and Architecture and Living Spaces with sales of goods and services amounting to $1.9 billion, $1.9 billion, and $1.7 billion respectively. The production and consumption of the arts both fine and commercial is strong within the Denver metropolitan region which these numbers reflect. The region's music ecosystem alone generates over $800 million in sales and supports more than 8,500 jobs.[9]

While the Fashion industry cluster ranks the lowest in terms of sales revenue, it is still significant with over $250 million in sales for 2019. More interesting is the potential it holds for Denver's creative economy. The central event for the industry cluster, "Denver Fashion Week" is emerging as a viable event for the fashion world while the outdoor recreation industry in Colorado – which includes fashion and garment design as a huge component – continues to grow.[10]

Initial Impacts of the COVID-19 Crisis

Background

The creative economy in the Denver metropolitan region was poised for further growth before the COVID-19 pandemic sparked the greatest economic crisis in the United States since the Great Depression. This report offers a portrait of Denver's creative economy as it appeared immediately before the COVID-19 crisis took hold in the region. It is impossible to detail the exact effects this crisis will have regarding the findings presented in this report as it is still unfolding at the time of writing, but it is important to address its influence. This section presents an estimate of the initial effects the COVID-19 crisis will have on creative industry employment and sales revenue in the Denver metropolitan region.

An economic model was constructed to develop the estimates in this section and employs a time frame beginning on April 1st, 2020 and ending on July 31st, 2020. This model incorporates several assumptions based on an informed perspective. The effects of local and statewide "stay-at-home" and "safer-at-home" orders and the closing of non-essential businesses are considered as well as all live events at full-capacity being prohibited until likely 2021 at the earliest. The model assumes access to federal stimulus funds for firms, establishments, and the self-employed. Additionally, this model incorporates a predicted 24% contraction of the United States' overall economy taking hold in April and progressing through the second quarter of 2020 and unemployment averaging 14% in the same time period.[11]

Information concerning how the COVID-19 crisis may affect specific industries within the creative economy was gained from informal interviews with those in the industries that comprise it and perspectives published via media outlets, private firms, and government agencies. It is important to note that estimated job losses include those who are laid off and furloughed, plus those who piece together steady employment through a succession of freelance "gigs" and as such may regain employment in the creative economy beyond the time period examined.

Impacts

The creative industries in the Denver metropolitan region will lose an estimated 29,840 jobs and over $1.4 billion in sales revenue between April and July 2020 (Table 6). To give some perspective on these losses, a sample month for Denver's creative industries supports an estimated 96,358 jobs and $1.3 billion in sales revenue. This four-month period of estimated losses will contract Denver's creative industries by 31% in terms of employment and 9% in annual sales revenue.

Table 6. Estimated Cumulative Losses for the Creative Industries: April to July 2020

Month	Jobs	Sales Revenue
April	19,126	$257,905,238
May	30,525	$649,587,605
June	32,151	$1,068,081,776
July	29,840	$1,433,269,171

Source: EMSI (via Denver Arts & Venues and Denver Economic Development & Opportunity), Author's Estimates

For deeper insight into how these losses are structured, an examination of the eight industry clusters within Denver's creative industries is helpful. The Music, Theater, Dance, and Visual Arts industry cluster is responsible for the majority of losses due to the COVID-19 crisis. The cluster is estimated to lose 16,559 jobs and $469 million in sales revenue between April and July. This represents just over half of all estimated jobs lost and 33% of all estimated sales revenue lost in the region's creative industries during the time period (Table 7). These significant losses are due largely to the state's music industry coming to a complete stop in addition to other performing arts activities such as theater and dance having to cease all live performances.

Table 7. Estimated Cumulative Losses for the Creative Industries by Cluster: April to July 2020

Cluster	Jobs	Sales Revenue
Music, Theater, Dance, and Visual Arts	16,559	$469,236,827
Design and Advertising	2,814	$155,465,313
Architecture and Living Spaces	2,410	$104,877,212
Film, Television, and Radio	2,403	$297,643,088
Creative Technology	2,390	$202,397,575
Publishing	2,187	$118,128,650
Fashion	719	$27,002,725
Culture and Heritage	358	$58,517,781
Totals	29,840	$1,433,269,171

Source: EMSI (via Denver Arts & Venues and Denver Economic Development & Opportunity), Author's Estimates

Although the Film, Television, and Radio industry cluster comes in fourth in terms of employment loss, the comparatively higher valuation of its output places it in second for estimated losses in sales revenue. The sizeable losses in that sector are due to film, television, and commercial production largely shutting down with post-production work drying up as well. Advertising on television and radio will also suffer as other industries slowdown – a situation that will impact the Design and Advertising cluster in a broader capacity, helping it to shed an estimated 2,814 jobs and $155 million in sales revenue. Similarly, the Architecture and Living Spaces cluster will feel measurable effects from the COVID-19 crisis as commercial and residential building is disrupted, resulting in an estimated 2,410 jobs lost and $104 million in lost sales revenue.

Conclusion

These are estimations and subject to influences still unfolding and factors unique to creative economies. How policymakers at all levels of government continue to react to the COVID-19 pandemic is dynamic, as is the spread of COVID-19. Multiple variables may be introduced via policy or through the spread of COVID-19 that could significantly change these estimations. In addition, these estimations are for the creative industries, and include people in creative occupations and other occupations within creative industry firms and establishments, the self-employed, and those working part-time in a freelance capacity. If one considers the entire creative economy and how its dynamics are interwoven with other industries, an even more challenging scenario emerges.

Those who are in creative occupations that drive both the creative industries and the broader creative economy are particularly vulnerable to the economic shock of the COVID-19 crisis as a disproportionate number of them are either self-employed or work freelance in addition to other jobs. For example, 29% of architects, 43% of graphic designers, 71% of fashion designers, and 78% of musicians in the Denver metropolitan region are either self-employed or work freelance with presumably a sizeable portion of these individuals working other jobs for economic security either within or outside of the creative industries.

Add to that the number of those working full-time in creative occupations in industries like service, hospitality, travel, or retail – i.e., industries which are also currently experiencing their own challenging COVID-19 crisis scenarios – and the precarious position of Denver's entire creative economy emerges.

Although there are many variables still in play at this early stage of the COVID-19 crisis, there will undoubtedly be wide-ranging and long-lasting impacts on the Denver metropolitan region's creative economy. Regional professional groups, philanthropic organizations, municipal governments, and arts agencies should coordinate efforts swiftly to address the region's creative economy by taking two steps. The first step is to advocate for local, state, and federal funding for creative workers, firms, and establishments. This funding will help with immediate needs in the creative economy and prevent it from losing all the momentum it had up until this point.

The second step is to establish a program similar to the New Deal-era's Federal Art Project in the 1930s and 1940s wherein unemployed workers in creative industries and occupations could be employed on projects in their communities and throughout the state. Teams of creatives could work together across disciplines to solve challenges like how to retrofit performing arts venues so they may safely reopen or reimagine and program open spaces when the COVID-19 crisis has passed. Incorporating representatives from industries like education, technology, and health care as advisors in this program would help create projects that could upgrade participants' skills, further integrate the creative economy within the broader knowledge economy, and offer potential for innovation in an interdisciplinary setting.

The Denver metropolitan region's creative economy was healthy and growing before the challenges posed by the COVID-19 crisis and it is positioned for continued growth and resilience. The next year or two are critical as a new environment can be established to facilitate the return of growth while also preparing creative workers, firms, and establishments to develop the creative economy of the future.

Acknowledgements

About Denver Arts & Venues

This report was commissioned through Create Denver, an initiative through Denver Arts & Venues that supports the economic growth and vitality of Denver's creative sector through research, policy, and advocacy. Create Denver builds partnerships, programs, and opportunities that showcase Denver's talented and dynamic creative community, recognizes its role in making Denver vibrant and economically vital, and catalyzes the sector to become cohesive and sustainable through a diverse, equitable, and inclusive lens.

Denver Arts & Venues' mission is to amplify Denver's quality of life and economic vitality through premier public venues, arts and entertainment opportunities. Denver Arts & Venues is the City and County of Denver agency responsible for operating some of the region's most renowned facilities, including Red Rocks Park and Amphitheatre, the Denver Performing Arts Complex, Colorado Convention Center, Denver Coliseum, and McNichols Civic Center Building. Arts & Venues also oversees the Denver Public Art Program, Create Denver, SCFD Tier III granting process, Arts Education Fund, and other entertainment and cultural events such as the Five Points Jazz Festival, Urban Arts Fund, P.S. You Are Here, and implementation of IMAGINE 2020: Denver's Cultural Plan. Denver Arts & Venues is committed to equity, diversity, and inclusion in all our programs, initiatives, and decision-making processes.

For more information:

Lisa Gedgaudas
Program Administrator, Create Denver
Denver Arts & Venues, City of Denver
Lisa.gedgaudas@denvergov.org
www.artsandvenuesdenver.com

About the Author

Dr. Michael Seman is an assistant professor of arts management in Colorado State University's LEAP Institute for the Arts and a research associate in Colorado State University's Regional Economic Development Institute. He received his doctorate in urban planning and public policy from the University of Texas at Arlington in 2014. Before joining Colorado State University, Michael was Director of Creative Industries Research and Policy at the University of Colorado Denver College of Arts and Media. His co-edited volume concerning the production and consumption of music in the digital age was published by Routledge in 2016 as part of their Contemporary Human Geography Series and Michael recently helped author music strategies for both the City of Denver and the State of Colorado. Michael's work can also be found in many academic journals including *Cities*, *Regional Science Policy and Practice*, *Applied Research in Economic Development*, *City, Culture and Society*, *Industrial Geographer*, *Artivate: A Journal of Entrepreneurship in the*

Arts, and most recently in *Growth and Change*. National Public Radio, *Vice*, *Wired*, *The Washington Post*, and many regional media outlets seek Michael's insight and he is often invited to speak at professional and civic events across the country.

For more information:

Dr. Michael Seman
Colorado State University
Assistant Professor, Arts Management at LEAP Institute for the Arts
Research Associate, Regional Economic Development Institute
michael.seman@colostate.edu
https://leap.colostate.edu
https://redi.colostate.edu

Appendix: Methodology

This report examines the scale and scope of the Denver metropolitan region's creative economy in two ways. First, the creative economy is measured by the scale and scope of distinct creative industry clusters. This "industrial approach" offers insight into the total number of jobs (whether in creative occupations or not) and the overall sales of goods and services that can be attributed to these creative industry clusters. Using this approach captures everyone employed in a music promotion firm, from the receptionist to the graphic designer on staff to the promoter booking the concerts. This approach also captures the graphic designer who is self-employed with her own practice, plus the graphic designer who freelances part-time. With an industrial approach, sales of goods and services from all firms, establishments, the self-employed, and freelancers are captured as well. An "occupational approach" is also taken to consider just the employment of the creative individuals who drive this activity in creative industry firms and establishments, are employed by firms in a different industry, are self-employed, or are freelancing. This approach isolates a region's core creative workforce and allows for closer analysis of creative employment throughout the broader economy.

Whether taking an industrial or occupation approach to measuring a creative economy, the first step is to define the region examined. This report uses the United States Office of Management and Budget's (OMB) "Denver-Aurora-Lakewood, CO Metropolitan Statistical Area" definition for measuring creative economy activity in the Denver metropolitan region.

As there is no general consensus on which industries definitively comprise the creative economy, the next step in developing this report was selecting which industries defined by the OMB's North American Industrial Classification System (NAICS) would be considered part of the region's creative economy.[12] A list of potential industries was created after reviewing similar studies, academic research papers, and methodologies offered by national arts associations. A similar method was used to identify which occupations as defined by the OMB's Standard Occupational Classification (SOC) system should be included in this report. These lists were then presented to a representative of Denver Arts & Venues for input on which industries and occupations would best represent the creative economy regionally. These lists were then refined according to the input provided and formally used to gather data for both creative industries (Table A1) and creative occupations (Table A2).

Denver Arts & Venues and Denver Economic Development & Opportunity provided the source data used in this report via Economic Modeling Specialists International (EMSI), an industry-standard economic analyst tool. EMSI gathers data provided by the Bureau of Labor Statistics, Bureau of Economic Analysis, U.S. Census, and other city, state and federal organizations. This report pulled data from EMSI's "Q4 2019 Data Set." In some cases, the data sets provided had to be augmented by data gathered from the Bureau of Labor Statistics. EMSI data sets are valuable for creative economy analysis as they capture employment at firms and establishments, those who are self-employed as solo practitioners, and those who earn second incomes from their work in the creative economy. This is important as a substantial amount of work in the creative economy is completed by those who are self-employed or work in a freelance capacity.

Table A1: List of Creative Industries

NAICS	Industry	NAICS	Industry
313210	Broadwoven Fabric Mill	339910	Jewelry and silverware manufacturing
313220	Narrow Fabric Mills	339992	Musical instrument manufacturing
313310	Textile & Fabric Finishing Mills	423410	Photographic equipment and supplies merchant wholesalers
313320	Fabric Coating Mills	423940	Jewelry, watch, precious stone, and precious metal merchant
314910	Textile bag and canvas mills	424920	Book, periodical, and newspaper merchant wholesalers
314999	All other Misc. Textile Mills	448310	Jewelry stores
315190	Other apparel knitting mills	451130	Sewing, needlework, and piece goods stores
315210	Cut and Sew Apparel Contractors	451140	Musical instrument and supplies stores
315220	Men's and boy's cut and sew apparel manufacturing	451211	Book stores
315240	Women's, girl's, and infant's cut an sew apparel manufacturing	451212	News dealers and newsstands
315280	Other cut and sew apparel manufacturing	453110	Florists
315990	Apparel accessories and other apparel manufacturing	453920	Art dealers
316210	Footwear Manufacturing	511110	Newspaper publishers
316992	Women's handbag and purse manufacturing	511120	Periodical publishers
322230	Stationery product manufacturing	511130	Book publishers
323111	Commercial printing (except screen and books)	511191	Greeting card publishers
323113	Commercial screen printing	511199	All other publishers
323117	Books printing	511210	Software publishers
323120	Support activities for printing	512110	Motion picture and video production
327110	Pottery, ceramics, and plumbing fixture manufacturing	512120	Motion picture and video distribution
327212	Other pressed and blown glass and glassware manufacturing	512131	Motion picture theaters (except drive-Ins)
332323	Ornamental and architectural metal work manufacturing	512132	Drive-in motion picture theaters
337121	Upholstered Household Furniture Manufacturing	512191	Teleproduction and other postproduction services
337122	Nonupholstered Wood Household Furniture Manufacturing	512199	Other motion picture and video industries
337125	Household Furniture (Except Wood and Metal) Manufacturing	512230	Music publishers
337212	Custom architectural woodwork and millwork manufacturing	512240	Sound recording studios

Table A1: List of Creative Industries (continued)

NAICS	Industry	NAICS	Industry
512250	Record Production and Distribution	711110	Theater companies and dinner theaters
512290	Other sound recording industries	711120	Dance companies
515111	Radio networks	711130	Musical groups and artists
515112	Radio stations	711190	Other performing arts companies
515120	Television broadcasting	711310	Promoters of performing arts, sports, and similar events with
515210	Cable and other subscription programming	711320	Promoters of performing arts, sports, and similar events
519110	News syndicates	711410	Agents and managers for artists, athletes, entertainers, and
519120	Libraries and archives	711510	Independent artists, writers, and performers
519130	Internet publishing and broadcasting and web search portals	712110	Museums
541310	Architectural services	712120	Historical sites
541320	Landscape architectural services	712130	Zoos and botanical gardens
541340	Drafting services	811420	Reupholstery and furniture repair
541410	Interior design services	812921	Photofinishing laboratories (except one-hour)
541420	Industrial design services		
541430	Graphic design services		
541490	Other specialized design services		
541810	Advertising agencies		
541820	Public relations agencies		
541830	Media buying agencies		
541840	Media representatives		
541850	Outdoor Advertising		
541860	Direct mail advertising		
541870	Advertising Material Distribution Services		
541890	Other services related to advertising		
541921	Photography studios, portrait		
541922	Commercial photography		
611610	Fine arts schools (private)		

Table A2: List of Creative Occupations

SOC Code	Occupation	SOC Code	Occupation
11-2011	Advertising and Promotions Managers	27-2041	Music Directors and Composers
11-2031	Public Relations Managers	27-2042	Musicians and Singers
13-1011	Agents and Business Managers of Artists, Performers, and	27-2099	Entertainers, Performers, Sports and Related Workers, All
17-1011	Architects, Except Landscape and Naval	27-3011	Radio and Television Announcers
17-1012	Landscape Architects	27-3012	Public Address System and Other Announcers
17-3011	Architectural and Civil Drafters	27-3021	Broadcast News Analysts
25-4011	Archivists	27-3022	Reporters and Correspondents
25-4012	Curators	27-3031	Public Relations Specialists
25-4013	Museum Technicians and Conservators	27-3041	Editors
25-4021	Librarians	27-3042	Technical Writers
25-4031	Library Technicians	27-3043	Writers and Authors
25-9011	Audio-Visual Collections Specialists	27-3099	Media and Communication Workers, All Other
27-1011	Art Directors	27-4011	Audio and Video Equipment Technicians
27-1012	Craft Artists	27-4012	Broadcast Technicians
27-1013	Fine Artists, Including Painters, Sculptors, and Illustrators	27-4013	Radio Operators
27-1014	Special Effects Artists and Animators (formerly Multimedia	27-4014	Sound Engineering Technicians
27-1019	Artists and Related Workers, All Other	27-4021	Photographers
27-1021	Commercial and Industrial Designers	27-4031	Camera Operators, Television, Video, and Motion Picture
27-1022	Fashion Designers	27-4032	Film and Video Editors
27-1023	Floral Designers	27-4099	Media and Communication Equipment Workers, All Other
27-1024	Graphic Designers	39-3021	Motion Picture Projectionists
27-1025	Interior Designers	39-3092	Costume Attendants
27-1026	Merchandise Displayers and Window Trimmers	39-5091	Makeup Artists, Theatrical and Performance
27-1027	Set and Exhibit Designers	41-3011	Advertising Sales Agents
27-1029	Designers, All Other	41-9012	Models
27-2011	Actors	43-4121	Library Assistants, Clerical
27-2012	Producers and Directors	43-9031	Desktop Publishers
27-2031	Dancers	49-9061	Camera and Photographic Equipment Repairers
27-2032	Choreographers	49-9063	Musical Instrument Repairers and Tuners

Table A2: List of Creative Occupations

SOC Code	Occupation
51-5113	Print Binding and Finishing Workers
51-6052	Tailors, Dressmakers, and Custom Sewers
51-6093	Upholsterers
51-7011	Cabinetmakers and Bench Carpenters
51-7021	Furniture Finishers
51-9071	Jewelers and Precious Stone and Metal Workers
51-9151	Photographic Process Workers and Processing Machine Operators

References

[1] Florida, R. (2002). *Rise of the Creative Class.* Basic Books: New York, NY; Howkins, J. (2001). *The Creative Economy: How People Make Money from Ideas*. The Penguin Press: London, England.

[2] Access Ventures (2018, July 10). "What is the creative economy?" Accessed from: https://accessventures.org/blog/creative-economy/; Forrester Consulting. (2014). *The Creative Dividend: How Creativity Impacts Business Results*. Cambridge, MA; Merlin, L. (2019, August 13). "The teamLab collective: defining beauty through digitization." *BlooLoop*. Accessed from: https://blooloop.com/features/teamlab-collective-digital-art/.

[3] Emsi. (2019). "All occupations in Colorado: Denver MSA." Economic Modeling Specialists International. Moscow, Idaho.

[4] Lupa, I. (2020, February 3). "Accelerated growth defines Denver's past decade." *Colorado Real Estate Journal*. Accessed from: https://crej.com/news/accelerated-growth-defines-denvers-past-decade/; O'Brien, K. (2018, March 20). "West region dominates rent growth leaderboard in the current cycle." RealPage. Accessed from: https://www.realpage.com/analytics/west-region-dominates-rent-growth-leaderboard-current-cycle/.

[5] Murray, J. (2018, March 22). "Denver grew by 100,000 people in just 7 years — but the pace has slowed for the 2nd straight year." *The Denver Post*. Accessed from: https://www.denverpost.com/2018/03/22/denver-population-growth-100000-7-years-pace -slowing; Rubino, J. (2017, December 15). "'Gentrification moves fast': A hard look at economic displacement in Denver's most historic black neighborhood." *The Denver Post*. Accessed from: https://www.denverpost.com/2017/12/15/denver-five-points-gentrification

[6] Harris, K. (2017, August 14). "RIP, Art: RiNo residents mourn the death of the River North Neighborhood. *Westword*. Accessed from: https://www.westword.com/arts/river-north-arts-districts-signs-turned-into-sites-of-mourning-9369463; Froyd, S. (2019, July 9). "Are big property tax bills painting Denver arts districts into a corner?" *Westword*. Accessed from: https://www.westword.com/arts/arts-districts-in-denver-are-feeling-the-crunch-of-heavy-property-taxes-11393489

[7] O'Brien, K. (2018, March 20). "West region dominates rent growth leaderboard in the current cycle." RealPage. Accessed from: https://www.realpage.com/analytics/west-region-dominates-rent-growth-leaderboard-current-cycle; Markus, B. (2019, August 19). "Who are the people who can actually afford Denver-Boulder's high rents and mortgages?" Colorado Public Radio. Accessed from: https://www.cpr.org/2019/08/19/who-are-the-people-who-can-actually-afford-denver-boulders-high-rents-and-mortgages/

[8] Antonoff, L. (2020, March 11). "Can a new tax incentive revive Colorado's dying film industry?" *Westword*. Accessed from: https://www.westword.com/arts/colorado-lawmakers-weigh-a-tax-credit-to-bolster-a-struggling -film-industry-11659161

[9] Gedgaudas, L., Seman, M., Merrill, B., and Elliott, J. (2018). *Denver Music Strategy*. Prepared for Denver Arts & Venues. Denver, Colorado.

[10] Rabimov, S. (2020, January 22). "Denver Fashion Week helps American designers to succeed." *Forbes*. Accessed from: https://www.forbes.com/sites/stephanrabimov/2020/01/22/denver-fashion-week-helps-american-designers-to-succeed/#542ab5f23bae; Kohler, J. (2019, January 25). "Colorado's outdoor recreation economy grows to $62.5 billion, new report says." *The Denver Post*. Accessed from: https://tinyurl.com/r95ljdw

[11] Goldman Sachs: Economic Research. (2020, March 20). "US Daily: A sudden stop for the US economy." The Goldman Sachs Group, Inc. New York, NY. Accessed from: https://www.goldmansachs.com/insights/pages/gs-research/us-daily-20-mar-2020/report.pdf; Swagel, P. (2020, April 2). "CBO's current projections of output, employment, and interest rates and a preliminary look at federal deficits for 2020 and 2021." Congressional Budget Office. Washington, D.C. Accessed from: https://www.cbo.gov/publication/56335.

[12] Markusen, A., Wassall, G. H., DeNatale, D., and Cohen, R. (2008). "Defining the creative economy: Industry and occupational approaches." *Economic Development Quarterly*, 22(1): 24–45.