2023

OTIS COLLEGE REPORT ON THE CREATIVE ECONOMY

OTIS COLLEGE OF ART AND DESIGN

COMMISSIONED BY OTIS COLLEGE OF ART AND DESIGN

Established in 1918 as Los Angeles' first professional school of the arts, Otis College of Art and Design is a non-profit 501(c)3 institution and a national leader in art and design education. The College educates a diverse community of over 1,200 students to become highly skilled, well-informed, and responsible professionals—empowering them to shape the world. First published in 2007, the annual *Otis College Report on the Creative Economy* focuses on the ways in which California's creative industries form an essential part of its overall economy.

More information is available at otis.edu.

PREPARED BY CVL ECONOMICS

CVL Economics is an economic research and planning firm committed to rethinking, reframing, and redefining the future of equitable development. Founded in 2021 in response to a rapidly shifting economic landscape, CVL recognizes that communities, institutions, and organizations are facing unprecedented challenges as they navigate uncertainty. Partnering with clients dedicated to sustainable and resilient growth, CVL employs a tailored mix of advanced data analytics and rigorous qualitative methods to guide regional strategy, program, and policy development for state, regional, and local jurisdictions; research universities and community college districts; nonprofit and philanthropic organizations; and community-based organizations.

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And thank you to our advocacy partners Arts for LA, Arts Orange County, Californians for the Arts, and Create CA for your support.

CALIFORNIA'S CREATIVE ECONOMY

$507.4B

DIRECT GROSS VALUE ADDED
2021

14.9%

APPROXIMATE SHARE OF GRP
2021

$581.7B

TOTAL LABOR INCOME
2021

$194.1B

TOTAL TAX REVENUE
2021

1.8 Million

CREATIVE ECONOMY JOBS
2021

- **1.1 Million** Entertainment
- **314,300** Fine & Performing Arts
- **284,800** Architecture & Related Services
- **42,300** Creative Goods & Products
- **62,700** Fashion

$148,189

CREATIVE ECONOMY AVERAGE ANNUAL WAGES
2021

$73,080

TOTAL ECONOMY AVERAGE ANNUAL WAGES
2021

PREFACE

The 2023 *Otis College Report on the Creative Economy* is part of an ongoing research project, first commissioned in 2007, to better understand the size, growth, structure, and character of the creative economy in California, with an emphasis on Los Angeles County. The *Report's* approach focuses primarily on five creative sectors. By analyzing creative industry activity, including employment and wages, the *Report* provides a robust look at the economic impact of the creative economy in California and regions across the state.

This year's *Report* also examines the broader economic climate in California and focuses on how technology and "gaming" are driving change and innovation across the creative industries and throughout the entire economy. The next few years will present a sea change for the creative economy as new tools for developing and distributing creative content continue to proliferate at an accelerated rate.

The economic data contained in the *Report* indicate the COVID-19 pandemic is in the rearview mirror of some sectors, while others are facing serious challenges. It remains critical that stakeholders across California's creative sectors engage in evidence-based discussions about how the state can foster, support, and implement inclusive development strategies to secure the future of our creative economy.

President's Message: 2023 Otis College Report on the Creative Economy

We're proud to share the 2023 *Otis College Report on the Creative Economy*.

Now in its 16th year, the *Report* is an invaluable resource for a variety of stakeholders who are actively engaged in shaping creative sectors in our region, state, and beyond. When it first launched in 2007, the *Report* highlighted the impact of creative industries in Los Angeles. Since then, it has expanded to showcase statewide data across eight regions of California, from Sacramento to San Diego, and offers an in-depth look at five key sectors that comprise the state's overall creative economy.

When we surveyed readers on the value of the *Report* last year, over 83% of respondents agreed that it continues to be a critical resource for tracking California's creative economy and that its content is important to the vital work they oversee, from influencing policy and programming to helping the public sector understand the size and breadth of the creative landscape.

At Otis College, we're preparing a new generation of artists and designers for a dynamic future in established and emerging fields, ranging from fashion and fine arts to animation, game, and entertainment design. As Los Angeles's oldest, and most diverse professional art and design college, it is paramount that we understand the evolving creative sectors that will employ our graduates so that we may continue to prepare them for success.

I would like to thank CVL Economics for their authorship of the *Report* and their commitment to this research. I would also like to share a special thank you to our sponsors who make this report possible, including City National Bank, City of Los Angeles Department of Cultural Affairs, Gallagher, Getty Foundation, Marsh, Moss Adams, The Ralph M. Parsons Foundation, and Sony Pictures Entertainment.

Best regards,
Charles Hirschhorn
President
Otis College of Art and Design

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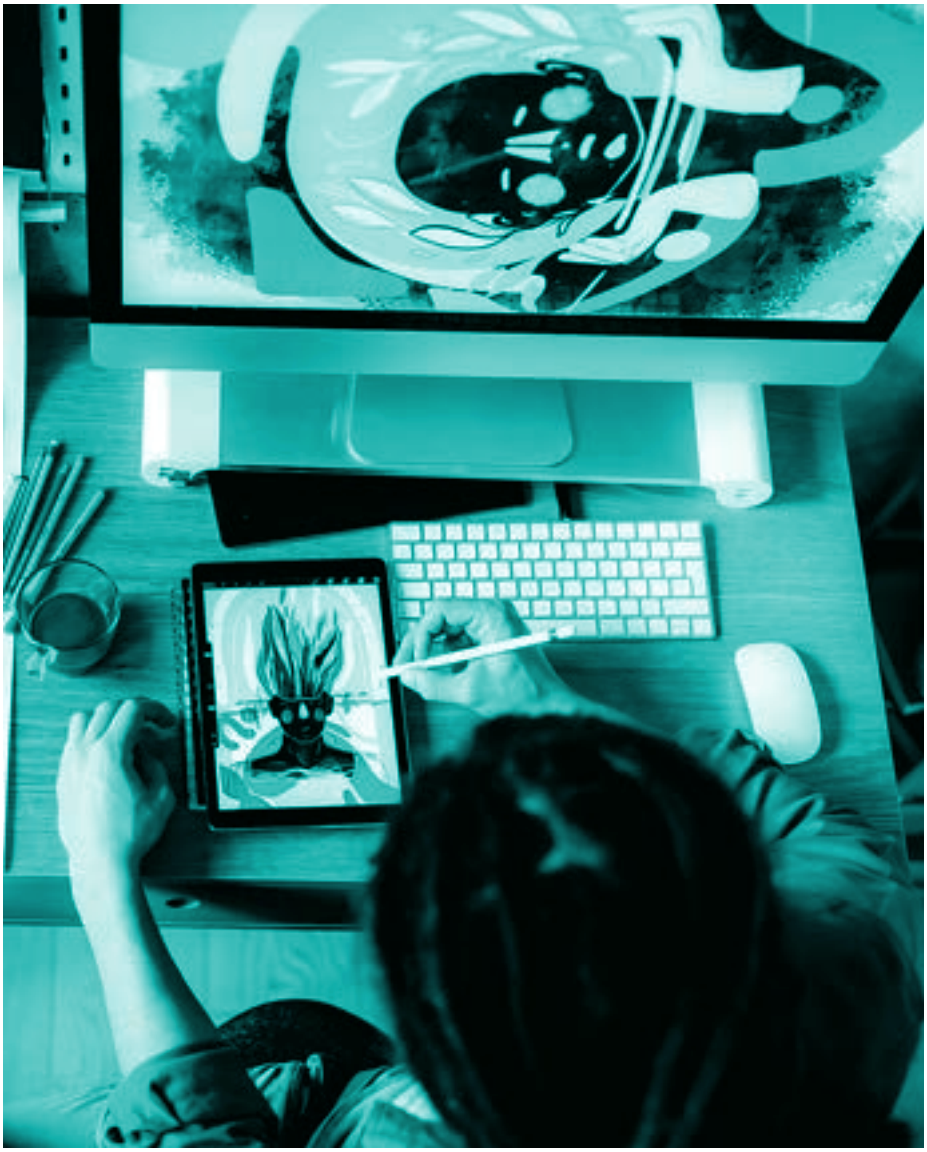


EXECUTIVE SUMMARY

California's creative economy finds itself in a moment of profound change. The effects of the pandemic continue to reverberate throughout creative sectors, and any sense of a return to normalcy becomes less likely with each passing year. For many industries, this is a discouraging state of affairs. At the same time, the past three years have been a period of reflection and adaptation, which has yielded an important insight: the economic value of the creative sectors extends beyond just the manifest production of artistic and cultural goods or the employment of creative people. Arguably, their key economic function is to inspire, leverage, and amplify innovation across the state. In this sense, the fact that a return to normalcy is unlikely is more a feature than a bug.

The *Otis College Report on the Creative Economy* has always been grounded on two principles: (1) the creative economy is an indispensable pillar of California's identity, growth, and development; and (2) the creative economy is both the driver and a beneficiary of technological advancement.

The pandemic proved both to be true as the creative sectors shifted activity from the physical world into the digital realm. The next few years will present a sea change for the creative economy as new tools for developing and distributing creative content continue to proliferate at a rapid rate.

U.S. EXPORTS FOR SELECT CREATIVE ECONOMY SERVICES 2021

	U.S. EXPORT VALUE	5-YEAR CHANGE
Video Games and Other Computer Software, including end-user licenses and customization	$29.2 Billion	54.2%
Advertising and Related Services	$23.6 Billion	33.9%
Audiovisual Services	$16.1 Billion	-24.7%
Licenses to reproduce and/or distribute Audiovisual Products	$4.3 Billion	2.5%
Architectural Services	$769 Million	-17.0%
Artistic Related Services	$501 Million	-29.5%
News Agency Services	$275 Million	-7.1%

Source: U.S. Bureau of Economic Analysis

This last point is the focus of this year's *Report*, which views the future of the creative economy through an important lens: video games. Yes, the U.S. export market for video games has experienced explosive growth in recent years (up 54% between 2017 and 2021). And, yes, there is an increasingly symbiotic relationship between game developers and Hollywood.[1] But the impact of video game (or "gaming") technology, specifically, is making inroads far beyond the gaming community, and in far more transformational ways. At the opera.[2] On virtual backlots.[3] Along the fashion runway.[4] In a decarbonized Los Angeles.[5] These increasingly complex technologies are giving rise to an expanding roster of new expressive applications and offer previously unprecedented methods of communication, production, and engagement.

The expansion of gaming technology across the creative economy may not provide immediate relief to those industries still caught in the long shadow cast by the pandemic. But by acknowledging its growing presence, recognizing its potential, and shaping its development, all creative sectors have reason to believe that gaming can be serious business indeed.

1 Dougherty, Conor. "Can 'The Last of Us' Unlock a Gaming Goldmine for TV?" New York Times. January 11, 2023. Retrieved from: https://www.nytimes.com/2023/01/11/arts/television/the-last-of-us-hbo.html

2 Swed, Mark. "Review: With Yuval Sharon and Gustavo Dudamel at the Helm, 'Valkyries' Makes History Again at the Bowl." Los Angeles Times. July 18, 2022. https://www.latimes.com/entertainment-arts/story/2022-07-18/review-wagners-valkyries-hollywood-bowl-dudamel-yuval-sharon.

3 Fatemi, Falon. "Virtual Production Offers Real Savings for Studios of All Sizes." Forbes. October 11, 2022. Retrieved from: https://www.forbes.com/sites/falonfatemi/2022/10/11/virtual-production-offers-real-savings-for-studios-of-all-sizes/?sh=2d6b23874c8d

4 Friedman, Vanessa. "After Grand Theft Auto and Minecraft, Balenciaga: The Video Game?" New York Times. December 7, 2020. Retrieved from: https://www.nytimes.com/2020/12/07/style/balenciaga-video-game-afterworld.html

5 Bahadursingh, Nathaniel. "Los Angeles the latest city to adopt twin technology to cut carbon emissions." Archinect. June 9. 2022. Retrieved from: https://archinect.com/news/article/150312805/los-angeles-the-latest-city-to-adopt-digital-twin-technology-to-cut-carbon-emissions

EXECUTIVE SUMMARY

The Creative Sectors

Of course, the effects of the pandemic still manifest today, albeit in different ways, in each of the five creative sectors: Entertainment, Fine & Performing Arts, Architecture & Related Services, Creative Goods & Products, and Fashion. As the early months of emergency funding gave way to longer-term recovery planning, there was a growing realization that a return to a pre-pandemic economic trajectory would be unlikely.

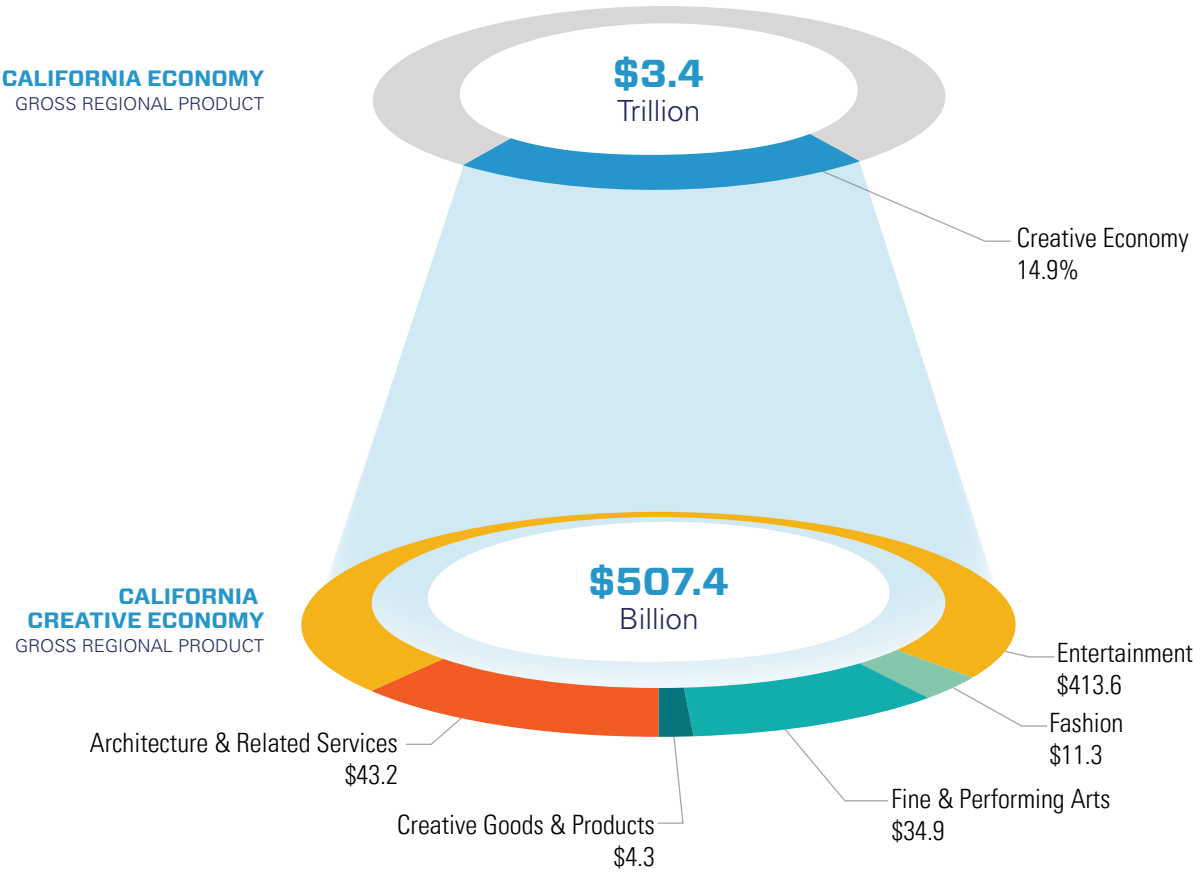
Some industries—especially those in the Fine & Performing Arts sector—are still struggling to regain their footing, but others have been able to pivot. In cases like the Creative Goods & Products and Fashion sectors, shifting market conditions led to new opportunities, which in turn reversed decades-long declines in employment. In other sectors, such as Entertainment and Architecture & Related Services, the pandemic accelerated the development and deployment of advanced technologies. The findings below provide a snapshot of the current state of California's creative economy:

- **Outsized Impact:** The creative economy is home to 7.6% of California's jobs, but its workforce has an outsized impact on overall output. The five creative sectors were collectively responsible for 14.9% of the state's $3.4 trillion economy in 2021; accounting for business-to-business transactions across the economy (indirect impacts) and domestic consumer spending by the creative workforce (induced impacts), total gross value amounted to $980 billion statewide.
- **Reliable Tax Base:** At a time when budget surpluses are giving way to budget deficits, the creative economy remains a stable source of fiscal revenue. For every 100 jobs in the creative sectors, an additional 281 jobs were supported in other sectors of the California economy in 2021. Each job supported by creative economy activity resulted in $37,717 additional tax revenue, generating over $194.1 billion in federal, state, and municipal taxes.
- **Employment Rebound:** The creative economy experienced stronger employment gains statewide emerging from the pandemic compared to the overall economy. Four out of the five creative sectors experienced job expansion between 2020 and 2021, which accounted for a 3.0% rate of job growth in the creative economy compared to only 2.7% for the total economy.

  Even though the creative economy employment growth did not match sectors like Transportation & Warehousing and Health Care & Social Assistance that served pivotal functions in the wake of the pandemic, the creative sectors collectively fared better than Manufacturing, Retail Trade, and Government between 2018 and 2021.[6]
- **Uneven Recovery:** Despite resilience in the aggregate, the recovery trajectories among the creative sectors varied significantly. The Fine & Performing Arts sector was hit the hardest by the pandemic, as employment levels in 2021 remained 18.9% below where they were in 2018. It also had both the lowest average annual wages in 2021 ($45,056) and the slowest rate of wage growth at 5.1%. By point of comparison, the Entertainment sector not only earned significantly higher wages on average at $199,277 but also experienced the highest rate of wage growth (36.4%) between 2018 and 2021.

[6] This report uses 2018 as the benchmark year for "pre-pandemic performance." Doing so allows for an analysis of how sectors were performing prior to the onset of COVID-19 and captures the tail end of any post-Great Recession growth trends.

ECONOMIC IMPACT OF CALIFORNIA'S CREATIVE ECONOMY ON STATE GRP
2021



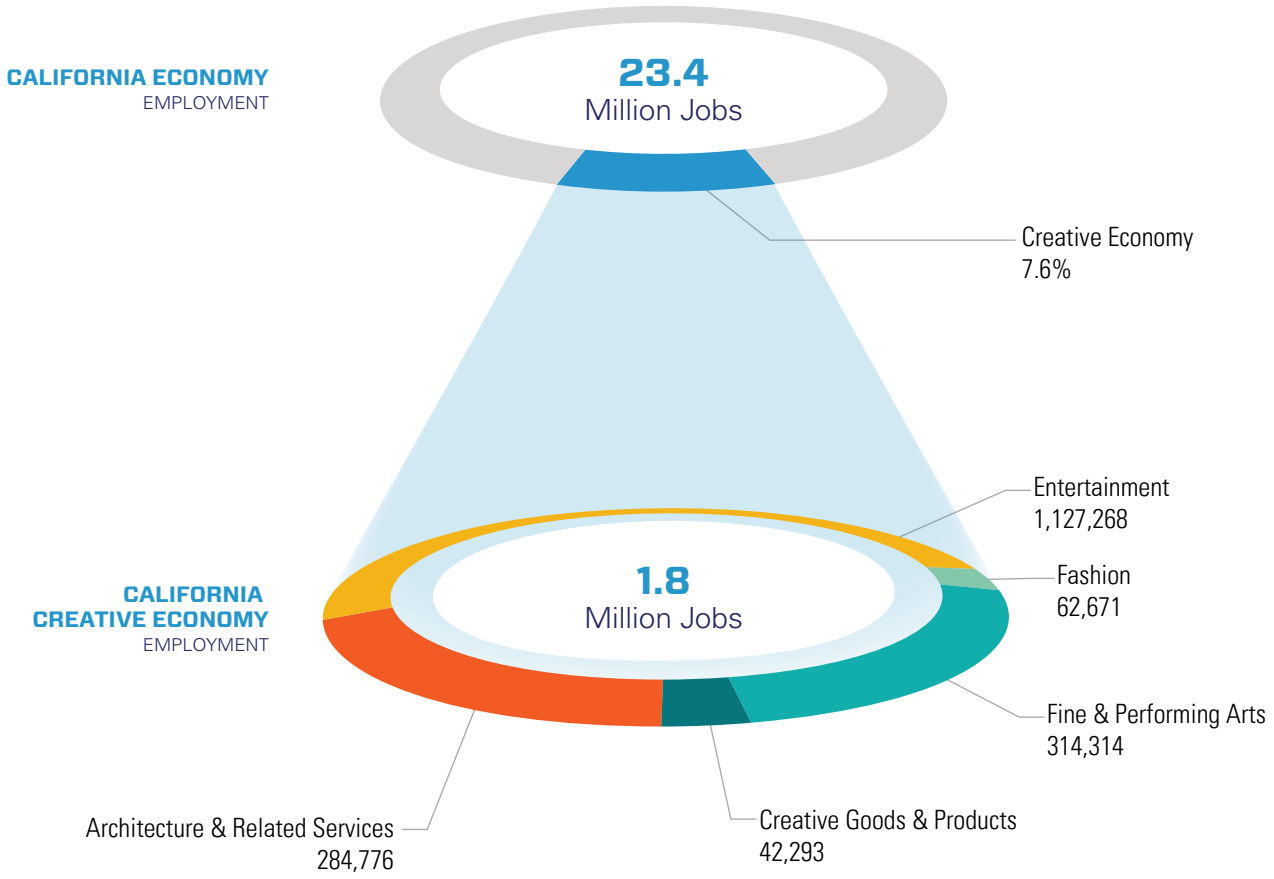
Note: Values reported in 2022 dollars

Source: U.S. Bureau of Economic Analysis; IMPLAN

- **Regional Centers of Gravity:** At over 685,000 jobs in 2021, Los Angeles County accounted for 37.4% of all jobs in the creative sectors across the state, with overwhelming employment shares in Fashion (63.6% of state jobs) and Entertainment (52.5% of state jobs). The job growth rate across the County's creative sectors was 61.0% higher than the statewide average (4.8% compared to 3.0%) between 2020 and 2021, and all five sectors experienced varying degrees of job expansion coming out of the pandemic. That said, creative economy employment in 2021 was still 2.1% below 2018 levels. Only the Bay Area creative economy, 73.9% of which was concentrated in Entertainment, saw employment go up (by 1.7%) over the four-year period.

Elsewhere in the state, the concentration of workers employed in regional creative economies remained relatively unchanged despite the pandemic, only decreasing about 0.2% to 0.5% in most regions between 2018 and 2021. That said, nearly every region experienced significant employment losses both in the creative and non-creative sectors. Northern California suffered the brunt of the COVID-induced recession, losing 16.3% of its creative economy jobs between 2018 and 2021, followed by the Central Valley

CREATIVE ECONOMY SHARE OF CALIFORNIA EMPLOYMENT
2021



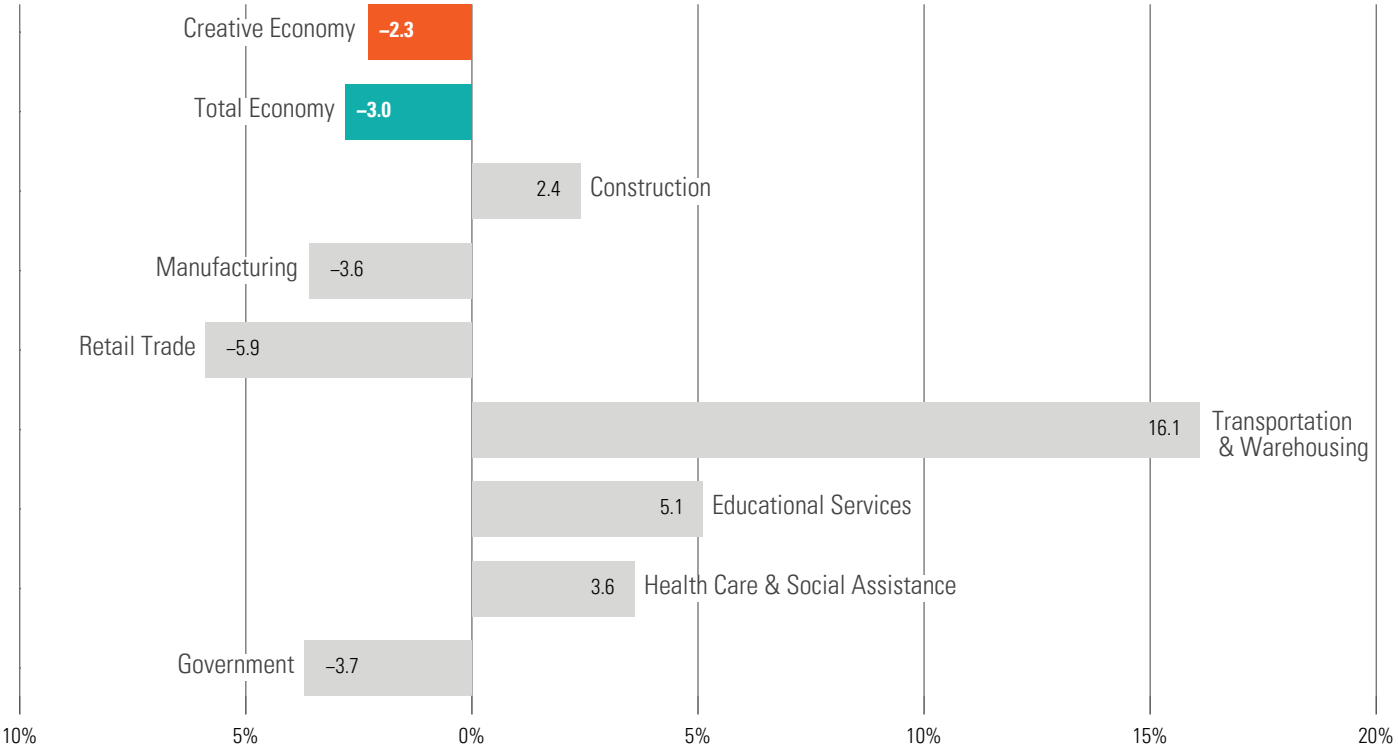
Source: U.S. Bureau of Economic Analysis; IMPLAN

(-9.4%) and the Central Coast (-9.0%). Certain sectors, however, performed better than others. Architecture and Related Services proved most resilient, and employment in the sector increased from Northern California to the Southern Border Region. Similarly, the Fashion sector expanded in every region except Southern California and the Inland Empire.

MEASURING CREATIVE OUTPUT

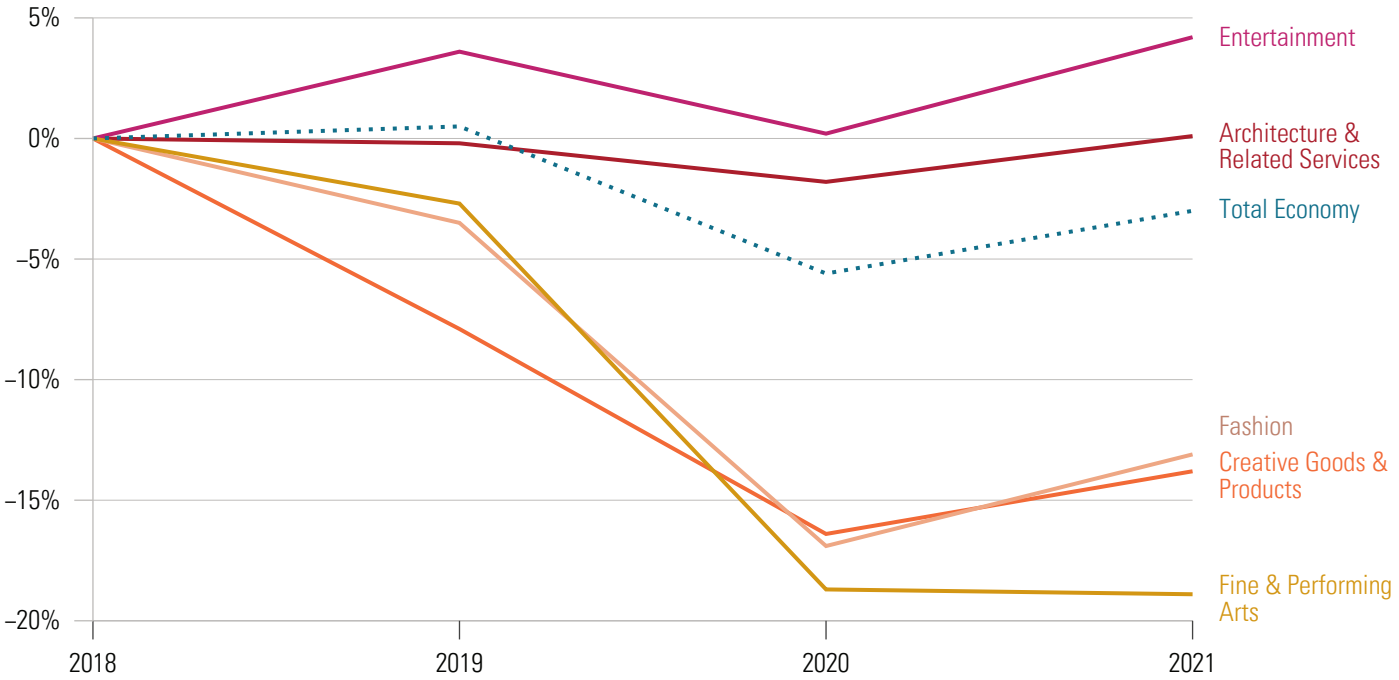
There are several ways to quantify and measure the size of an economy and its economic growth, and three distinct metrics are used in this Report: (1) gross regional product (GRP) is the sum of value added at every stage of production for all final goods and services produced within a region for a given period of time (or stated another way, the final market value of all goods and services produced in a given region); (2) gross value added, which measures the value of goods and services that have been produced by an industry, minus the cost of all inputs; and (3) employment, which captures the number of salaried and self-employed workers in a given industry or subsector.

EMPLOYMENT GROWTH IN SELECT CALIFORNIA SECTORS
2018 to 2021



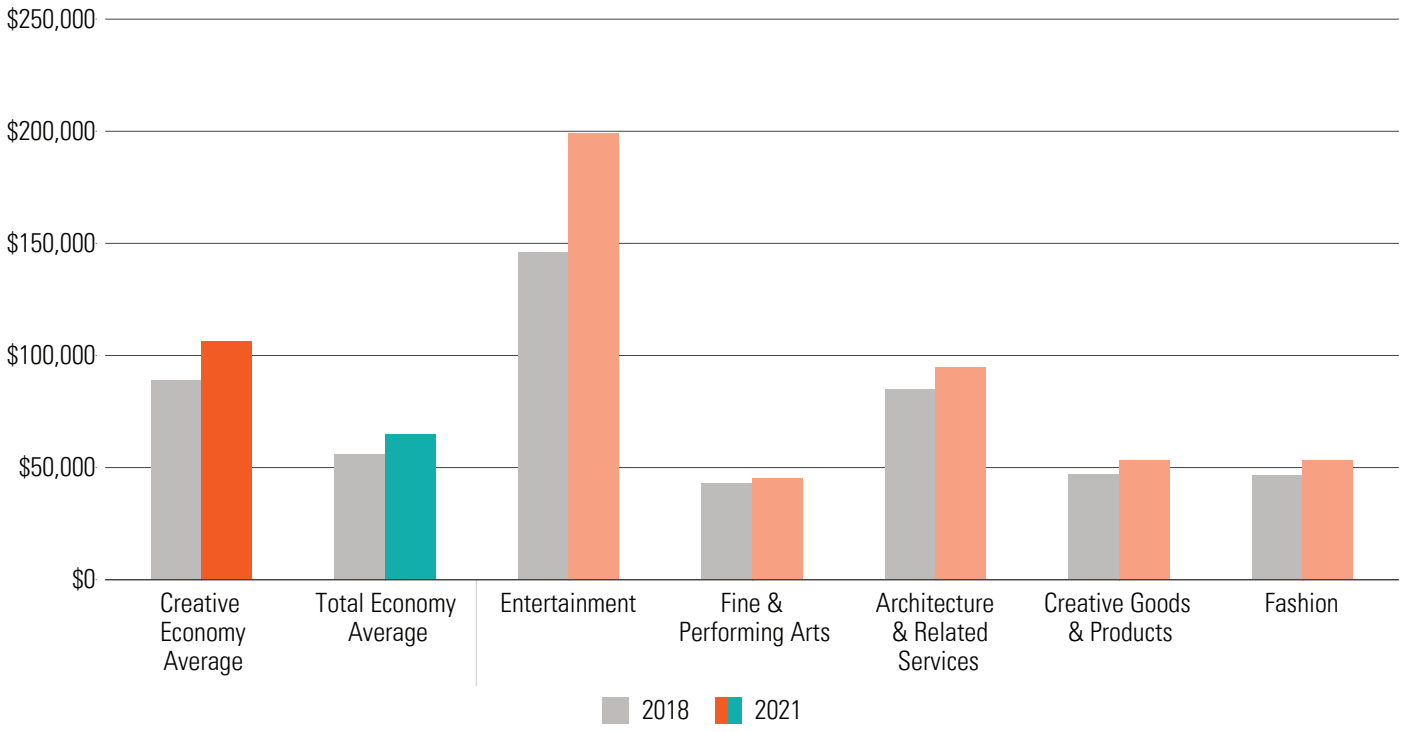
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages

CREATIVE ECONOMY GROWTH BY SECTOR IN CALIFORNIA
2018 to 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

AVERAGE ANNUAL WAGES FOR CALIFORNIA'S CREATIVE SECTORS
2018 to 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

SUMMARY OF CREATIVE ECONOMY EMPLOYMENT AND WAGES
2018 to 2021

	NUMBER OF JOBS				AVERAGE ANNUAL WAGES		
	2021	2018	Change	Share of Creative Economy (2021)	2021	2018	Change
Entertainment	1,127,268	1,081,451	4.2%	61.6%	$199,277	$146,117	36.4%
Fine & Performing Arts	314,314	387,713	-18.9%	17.2%	$45,056	$42,867	5.1%
Architecture & Related Services	284,776	284,361	0.1%	15.6%	$94,804	$84,810	11.8%
Creative Goods & Products	42,293	49,066	-13.8%	2.3%	$53,390	$46,960	13.7%
Fashion	62,671	72,135	-13.1%	3.4%	$53,083	$46,459	14.3%
Creative Economy	**685,364**	**700,057**	**-2.3**	**-**	**$106,266**	**$88,790**	**19.7%**

Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages, U.S. Census American Community Survey 5-Year Estimates

EXECUTIVE SUMMARY

The Economic Landscape

One facet of the COVID-19 era that has not lifted is an underlying sense of economic uncertainty, both within the creative sectors and across the broader economy. Gross domestic product returned to a positive growth trajectory last fall after two quarters of contraction, and inflation has been on the decline for some months now. That said, consumer spending is starting to slow as well, and the cost of core services and housing continues to rise while food and energy prices remain at elevated levels. Financial markets, which provided investors handsome returns as recently as 2021, have been bearish for some time now. Add to that the wave of layoffs shaking the technology sector in ways not seen since the dot com bubble burst, and it is understandable there may be cause for concern.

Yet it would be a mistake to conclude that labor market corrections in the broader technology sector are a harbinger of similar shocks to the creative sectors. Social media companies and familiar names like Alphabet, Microsoft, and Amazon may be shedding employees—many of whom benefitted from hiring surges during the pandemic—but labor market conditions in California and across the country remain tight with job openings far outnumbering job candidates. More importantly, many of the inventive applications of gaming technology in non-traditional spaces are occurring outside these firms, which have a much larger talent pool to draw from now than they did six months ago. How these events and broader macroeconomic trends may affect the creative economy in 2023 is unclear, but there are still a number of steps the state can take to foster creative sector growth in the short to medium term.

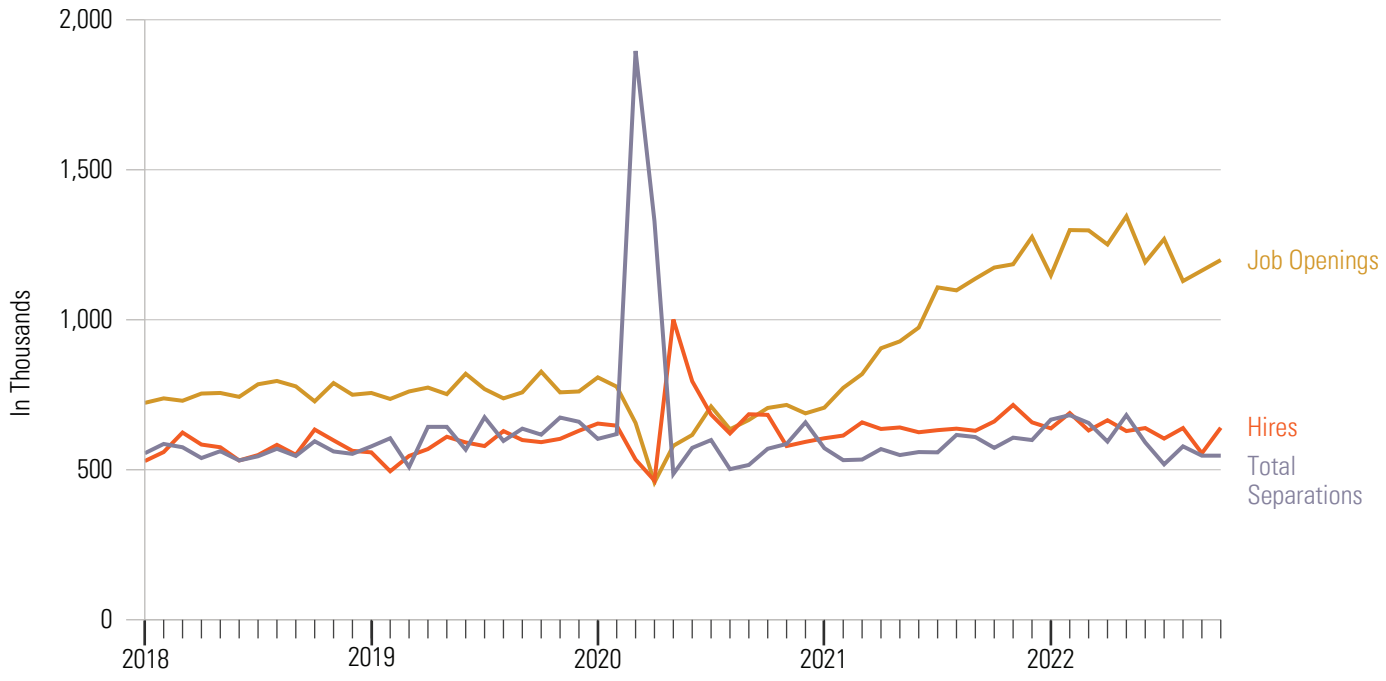
LARGEST LAYOFFS IN THE TECHNOLOGY SECTOR
August 2022 to January 2023

COMPANY	# OF REPORTED LAYOFFS	ANNOUNCED
Alphabet	12,000	January 20
Microsoft	10,000	January 18
Coinbase	2,110	January 10
Amazon	18,000	January 5
Twitter	3,740	January 5
Salesforce	9,090	January 4
DoorDash	1,250	November 30
Kraken	1,100	November 30
Cisco	4,100	November 16

COMPANY	# OF REPORTED LAYOFFS	ANNOUNCED
Meta	11,000	November 3
Redfin	1,332	November 3
Stripe	1,050	November 3
Gopuff	2,300	October 21
Noom	1,095	October 11
Peloton	4,084	October 6
Snap	1,280	August 31
Robinhood	1,013	August 2

Source: Crunchbase

JOB OPENINGS AND LABOR TURNOVER
2018 to 2022 | Seasonally Adjusted



Source: U.S. Bureau of Labor Statistics Job Opening and Labor Turnover Survey

EXECUTIVE SUMMARY

Policy

The changes occurring in the creative sectors are prompting both structural and operational shifts throughout the entire economy; in this sense, "gaming technology" is foundational to the development of nearly all sectors, not just the creative ones. Crafting a robust set of policies to respond to as well as to shape this shifting landscape will not only foster a stronger economy but also allow California's residents and communities to capitalize on the resulting opportunities and benefits. The state, in partnership with local jurisdictions, should prioritize strategies that address the following four areas:

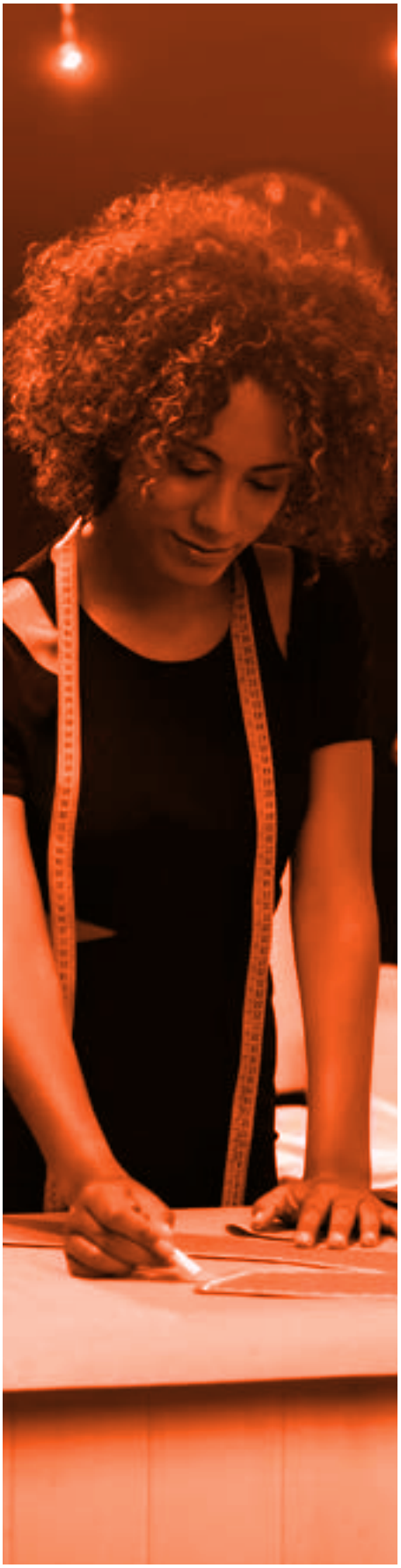
1. **Global Competitiveness**
   In a global market where expenditures on screen production have reached unprecedented levels, governments recognize that incentives can attract high-value inward investment, strengthen local production sectors, and build infrastructure for emerging industries. The creative economy is in a moment where the market is fusing creativity, art, and technology through cutting-edge techniques to bring a new world of products to market. Technological advances mean that there will be an ever-increasing crossover of skills within and across the creative sectors. Yet there continue to be difficulties in securing access to the talent required to support industry growth.

2. **Apprenticeship Opportunities**
   For most small- and mid-size enterprises the current regulatory framework isn't sustainable as currently structured. Hiring an apprentice does not provide the same kind of value proposition as a fully qualified candidate on the open market, yet the cost structure and tax responsibilities—including but not limited to federal income tax, state income tax, social security, health care, and state disability insurance—are often indistinguishable. A more thoughtful approach to nurturing talent through apprenticeship programs while easing the burden on participating firms is needed.

3. **Jobs And Skills Data Surveys**
   Incomplete and/or inconsistent data regarding skills shortages has led to a widening gulf between the kinds of skills needed in the creative sectors and the kinds of skills taught at educational institutions and in workforce development training programs. Steps need to be taken to standardize data collection, analysis, and dissemination at the statewide level on a periodic basis.

4. **Digital Research And Development Fund For The Arts**
   Funding research and development in this area is essential to providing accessible and equitable art and cultural opportunities. Such a fund would allow for the development of prototypes for immersive content using virtual, augmented, and mixed reality technologies. The opportunity to support artists and creators in these realms could be codified, with findings and best practices shared with the wider sector. Investment in developing digital production, distribution, and engagement capabilities to supplement existing business models would increase resilience and help the sector adapt to a digital environment that will only grow more complex, sophisticated, and essential each subsequent year.

It's time to usher in a new era for the creative economy, one that is equipped to succeed. Leveraging the potential of gaming technologies and setting the stage for the creative sectors to thrive will set the tone of California's growth trajectory for decades to come.



INTRODUCTION

Although it has been three years since the first cases of COVID-19 were detected in the United States, the effects of the pandemic continue to reverberate across California's creative sectors. In some cases, the impact has been transformative; in others, debilitating. The 2023 *Otis College Report on the Creative Economy* explores three key themes that define the state of today's creative economy and will undoubtedly shape its future:

- **Talent:** The individuals and groups that create and innovate within the creative sectors;
- **Technology:** The tools, platforms, and software that enable the creation and distribution of creative content; and
- **Policy:** The laws, regulations, and government programs that can nurture growth in a creative economy.

These themes are inextricably linked, and understanding how they interact will inform the growth, development, and impact of California's creative economy over the next decade.

Talent

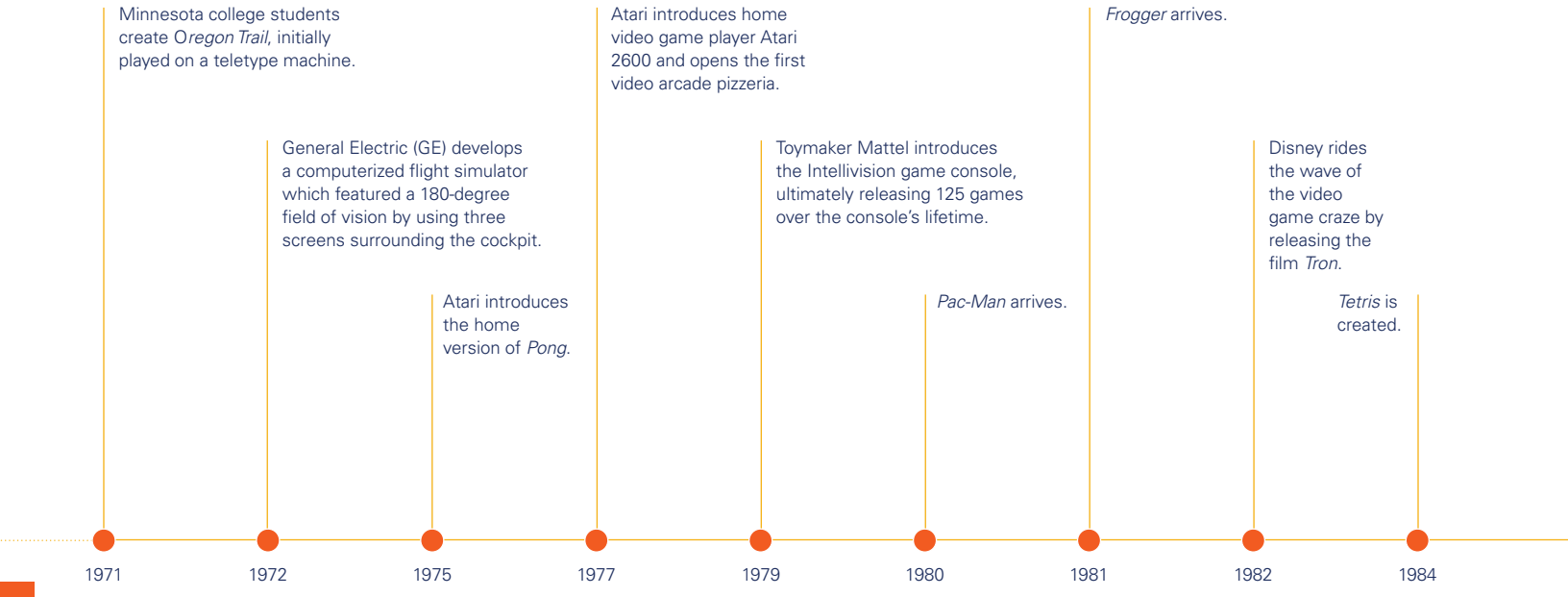
There is a deep interplay between amateur, non-profit, and commercial participants in the creative economy. One challenge for forming policy to support creative talent is the complexity of defining and understanding the workforce. A simple question, such as "how many artists are there in the region?" is far from a straightforward exercise. Labor market reports on the health or needs of workers in the arts and related industries tend to vary significantly. This disparity is influenced by two main factors: the expanding definition of the creative workforce and the employment structures that have evolved over time.

The creative sectors do not share a cohesive workforce infrastructure and employer-worker arrangements vary from one industry to another, which has created large obstacles for policymaking. Many individuals do not practice their art or creative pursuits as their primary, wage-earning job. Yet many counts of the workforce focus only on those employed full-time by organizations. While a broad definition is essential for a full picture of the creative economy, this report focuses on payroll, self-employed, and, for the first time this year, includes "gig jobs." Payroll and self-employed jobs are classified as a primary source of income for individuals, whereas the gig job estimates are based on administrative data from the federal government and reflect individuals who are gaining income from creative industry pursuits in a form other than what would be classified as a primary source of income.

Technology

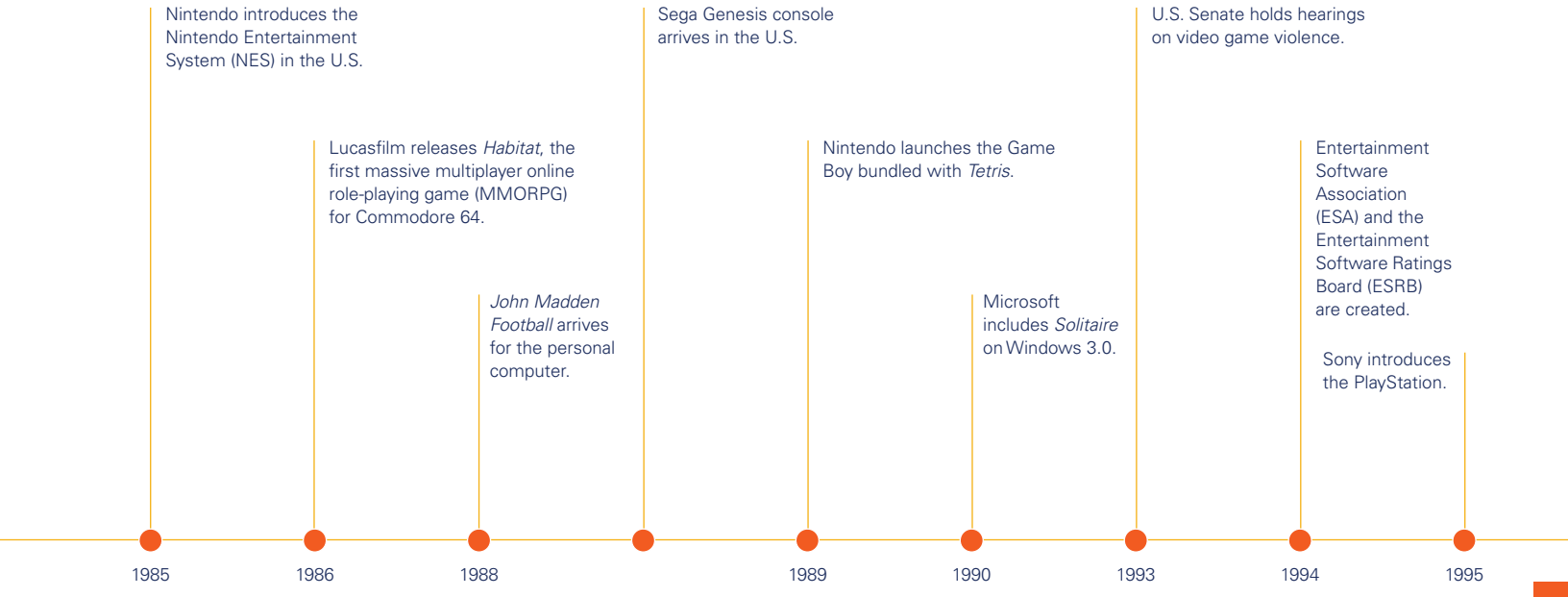
The pandemic brought the need for large swaths of the economy to move activity from the physical world into the digital realm; in doing so, sectors pivoted to building digital worlds to duplicate the physical world that was effectively closed for business for months on end. Businesses internalized the value of moving to digital storefronts for goods and services—regardless of scale—by minimizing and/or more effectively managing disruption. The need to represent the physical world in a virtual fashion has started to drive the next wave of digital offerings that will enable us to construct whole new experiences. Video game technology has been used to create virtual reality (VR) and augmented reality (AR) experiences, creating simulation environments across many fields ranging from aviation, defense, and medicine. The technology is also now allowing for the creation of interactive museum exhibits, theme park attractions, and advertising campaigns.

GAMING TECHNOLOGY TIMELINE

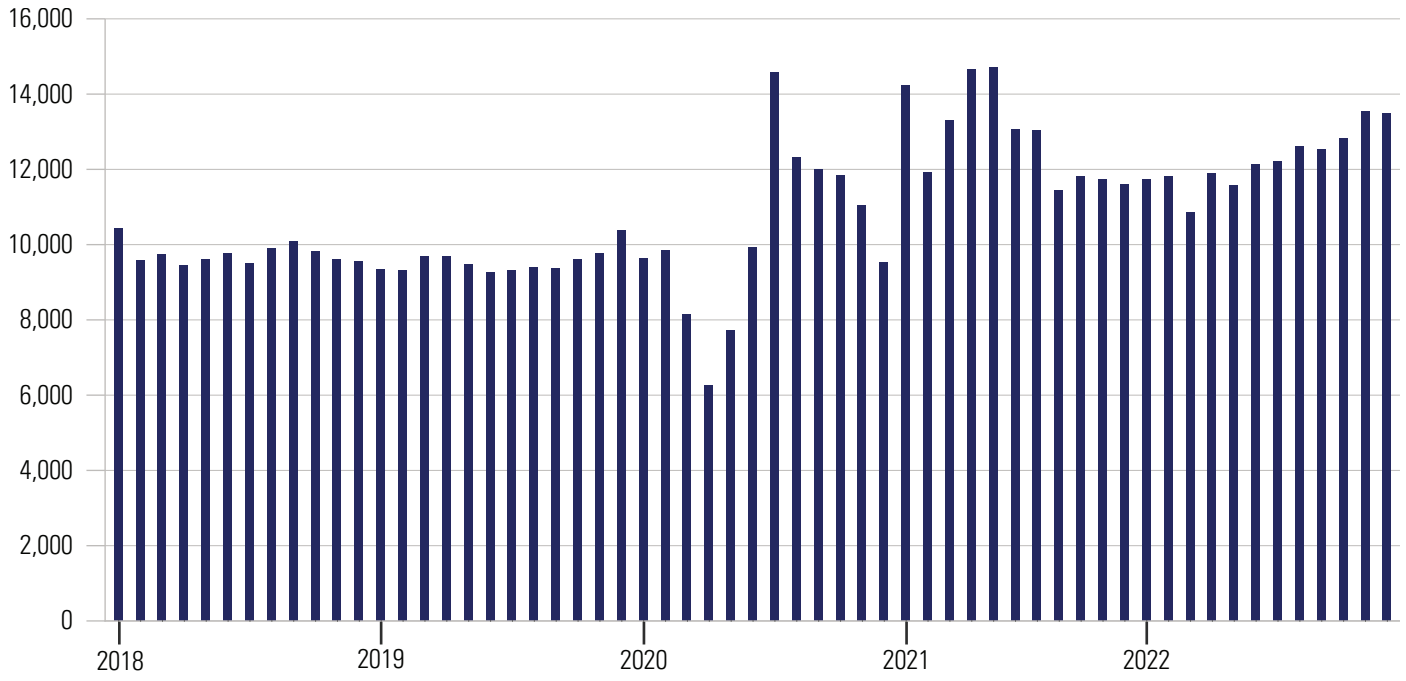


The phrase "creative destruction"—first coined in the 1940s by economist Joseph Schumpeter—comes to mind as we survey the structural changes unfolding across the creative economy. Business applications in California and across the United States increased significantly in mid-2020 and persisted at record-high levels through 2022. Many structural changes have diminished the incumbent advantage in some markets, which means many existing small businesses, non-profit organizations, and individual artists are incurring the costs of adaptation. At the same time, the entrepreneurial acumen among some of these same actors worked to their advantage. Many larger organizations, for example, had difficulty changing long-held routines and practices, which gave new and small businesses that were less rigid and more flexible in their operations a unique market advantage.

The *Otis College Report on the Creative Economy* was originally established with the purpose of quantifying and articulating the significance of the creative sectors to California's economy and reorienting policy in accordance with their significance. This year's *Report* brings an additional focus on technology and gaming with the goal of elevating an important insight that hasn't always been made explicit: the economic value of the creative sectors extends beyond just the manifest production of artistic and cultural goods or the employment of creative people. More broadly speaking, the creative economy's key contribution is driving, leveraging, and amplifying the momentum of innovation across the entire economy. Change in the creative sectors often introduces both structural *and* operational shifts throughout the economy; in this sense, "gaming technology" is foundational to the development of nearly all sectors, not just the creative ones.

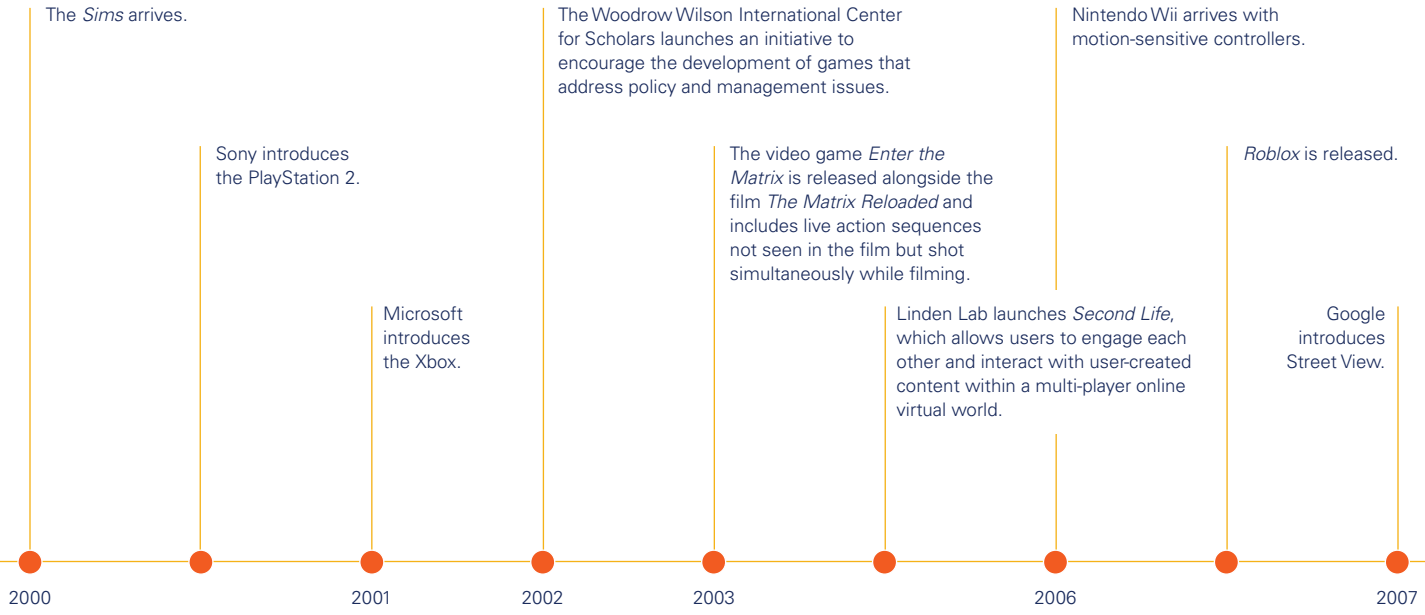


MONTHLY BUSINESS APPLICATIONS IN THE UNITED STATES
January 2018 to November 2022



Source: U.S. Census Business Formation Statistics

GAMING TECHNOLOGY TIMELINE
(Continued)

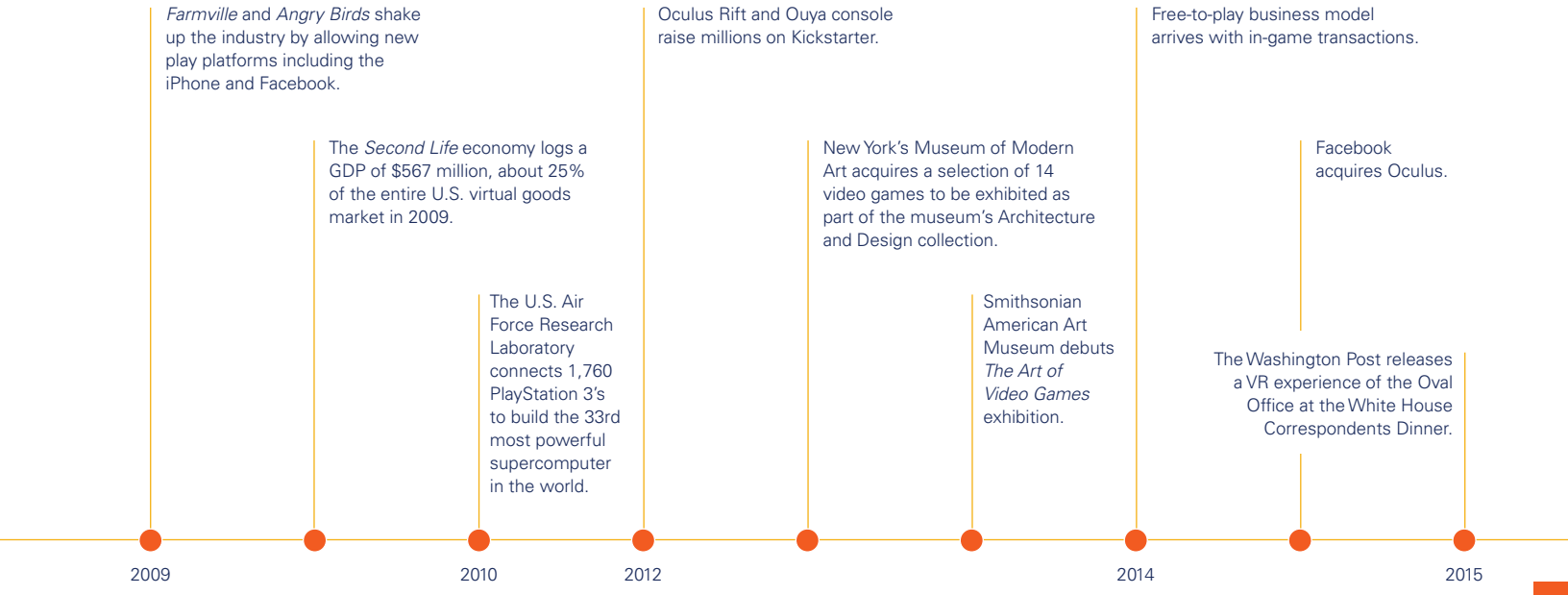


Policy

The conditions that undergird economic activity are often overlooked. The design of regulatory or market-based policies, combined with investment and strategy, play important roles in shaping how industries evolve and rarely is it enough to simply "understand" the local landscape. The 2022 Otis College Report noted, "jurisdictions around the globe are aggressively allocating assets to bolster their respective creative ecosystems and are deploying large portfolios of incentives to spark growth."[7] As the creative economy in California faces an ever more competitive global arena, there are historic parallels that suggest we need a large degree of dynamism in our current moment.

The past thirty years of policymaking and investment by jurisdictions outside the state of California have resulted in the contraction of post-production visual effects (VFX) employment by an estimated 50% in the state. What is stunning is that California has experienced this collapse over a period when both (1) the amount of content being produced has skyrocketed, and (2) the percentage of production budgets for visual effects have continued to grow larger as a percentage of total project costs. Economic and policy researchers have warned about the cost of inaction for years, but the implications now must be understood in terms of adjacent creative activity emerging in gaming and extended reality.

[7] Otis College Report on the Creative Economy, 2022, p.234.



The impacts of sophisticated visual effects ecosystems developing outside of California are no longer siloed to post-production work in the motion picture industry. Game development requires much of the same software and hardware used by special effects and postproduction firms; the skill sets involved are comparable and transferable between traditional television and film, gaming, and virtual worldbuilding. Those jurisdictions that may have initially started by fostering a visual effects ecosystem via tax incentives are now seeing the natural emergence of animation and video game clusters driven by existing industry knowledge and specialization and talent clusters. Today, California finds itself as the only major film production center that lacks a stand-alone visual effects (VFX) credit.

GAMING TECHNOLOGY TIMELINE
(Continued)

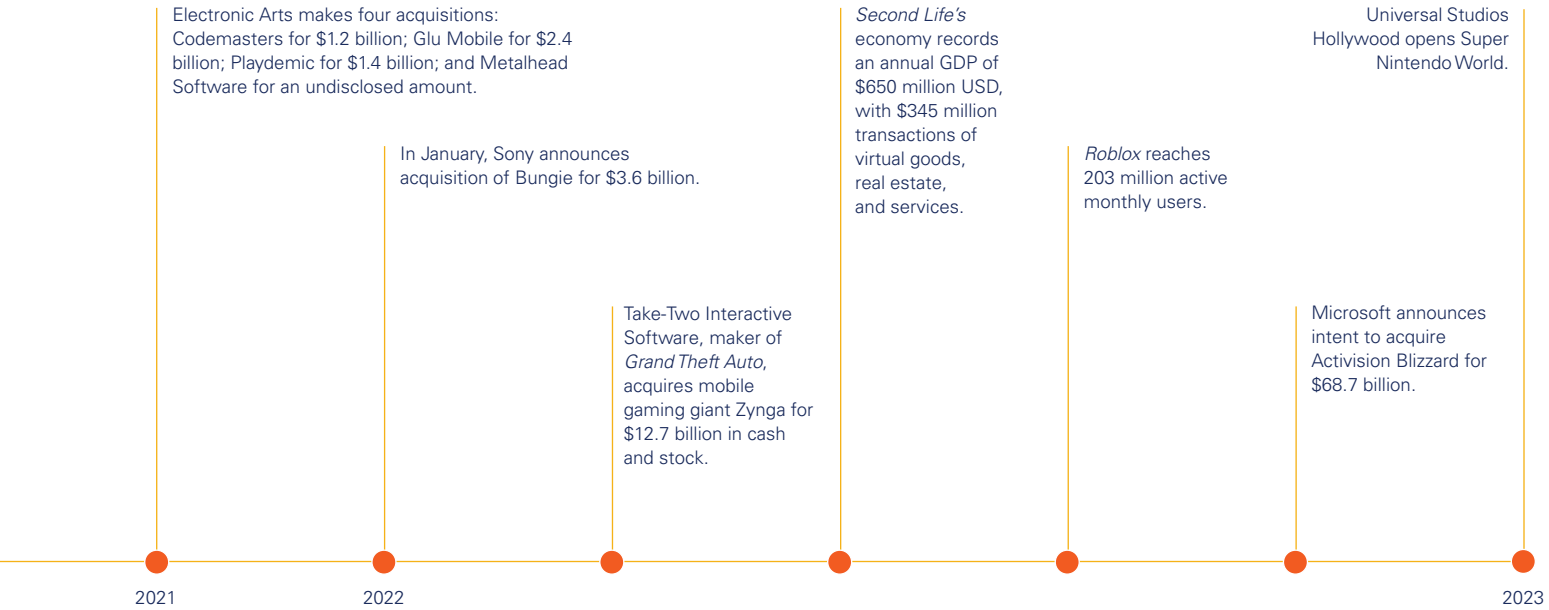
- **2016** — HTC releases its VIVE StreamVR headset.
- *Pokemon Go* brings augmented reality to the masses.
- **2017** — Epic Games releases *Fortnite*.
- **2018** — *Fortnite* launches Fortnite Creative Mode in the vein of worldbuilding on *Minecraft* and *Roblox*.
- **2019** — The *Fortnite World Cup* sells out at Arthur Ashe Stadium in New York, and viewership on Twitch and YouTube is estimated at over 2 million.
- *Beat Saber* becomes the first virtual reality (VR) title to sell more than a million copies.
- **2021** — *Minecraft* reaches 150 million monthly users.
- The Tribeca Film Festival drops "Film" from its name and features its first ever Official Selections for Games celebrating "the convergence of games, entertainment, and culture."

But the lesson to be taken away isn't solely one that pertains to visual effects film production. It is a lesson that applies equally across creative sectors that are poised to reinvent parts of their business model digitally. The narrative that follows explores how issues like these are permeating the entire creative economy and presents findings in two books:

BOOK 1: ANALYSIS reports on the current economic landscape, reviews the performance of the creative sectors, and offers policy recommendations in three parts:

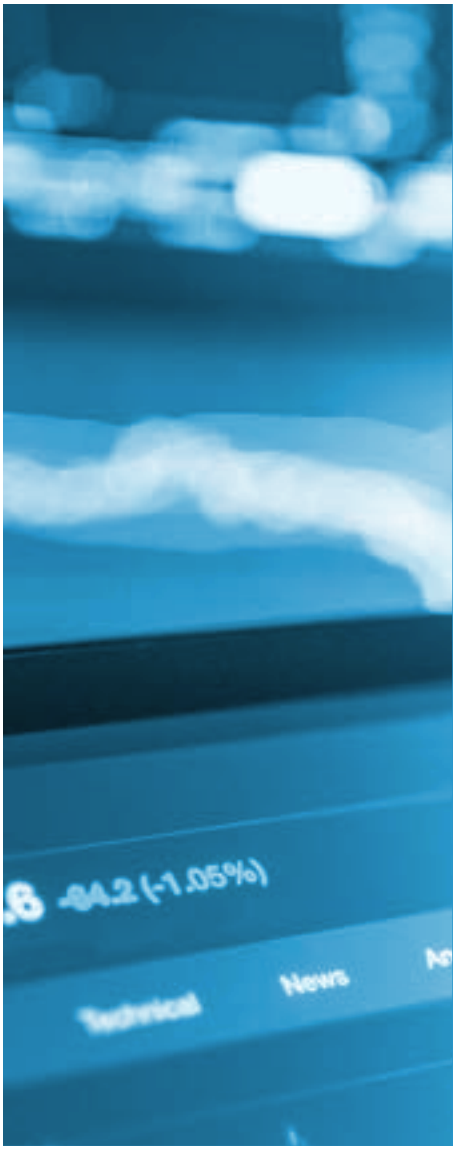
- **Part 1: Context** provides the broader macroeconomic overview of the world in which the creative economy currently finds itself heading into 2023. It examines key elements of the state, national, and global economic landscape.
- **Part 2: The Creative Sectors** examines the composition and output of the creative economy's five sectors in California and Los Angeles County and presents "spotlights" on technological developments that are shaping their trajectories.
- **Part 3: Recommendations** discusses policy priorities that can help creative economy stakeholders navigate uncertainty and leverage the opportunities that lie ahead.

BOOK 2: REGIONAL PROFILES presents capsule summaries of the creative economy across eight regions in California: Northern California, the Capital Region, the Bay Area, the Central Valley, the Central Coast, Southern California, the Inland Empire, and the Southern Border Region.



BOOK 1:

ANALYSIS



PART 1:

MACROECONOMIC CONTEXT

Three years out from the onset of COVID-19, the outlook for the U.S. economy continues to be clouded by uncertainty. Gross domestic product (GDP) rebounded after contracting during the first half of 2022, but financial markets are not expected to similarly reverse course anytime soon. Rising inflation rates are starting to slow, but fears of a looming recession remain. Labor market churn stabilized over the past 12 months, but demand for workers at the state and national levels still outpace supply. How well California's creative sectors will perform over the coming year is as much a reflection of this current climate as any other factor, and understanding the economic forces at play provides insight into the opportunities and challenges that lie ahead.

GDP Growth

The U.S. economy recovered quickly from the 2020 recession, and GDP growth was strong through the end of 2021 (Figure 1.1). At the same time, this overheated consumer spending led to greater inflationary pressure, which in turn caused the economy to contract at the beginning of 2022 as increasing prices outpaced wage gains. Slowing demand for imports and an easing of supply chain flows led to a return to pre-pandemic levels of domestic growth in the third and fourth quarters, though this had little practical effect on the wellbeing of the average U.S. household.

Within California, pronouncements of the state's imminent status as the fourth largest economy in the world are muted by the fact that the shift was attributable more to a severe drop in Europe's economic fortunes than a domestic surge (Figure 1.2). With historic budget surpluses giving way to $22.5 billion budget deficit in a matter of months, California's creative economy stakeholders are justified in maintaining a cautious outlook for the year.[8]

Exports

Despite a global economic slowdown in recent months, U.S. export markets remain strong. Exports in services are approaching pre-pandemic levels, and goods exports have increased by 56.7% since the depths of the 2020 recession (Figure 1.3). But whereas the United States places a distant second to China in terms of creative goods exports, it is the world's largest exporter of creative services (Figure 1.4). As is the case in domestic markets, some creative sectors fare better than others. The video game industry in particular experienced explosive growth between 2017 and 2021 and in part accounts for $29.2 billion in overseas sales (Table 1.1). On the other hand, architectural and artistic services have seen declines of 17.0% and 29.5%, respectively, over the same five-year period.

Employment

There is similar variation among sectors with respect to employment trends. Creative economy employment has been relatively resilient in the aggregate, with 2021 employment down only 2.3% from 2018 levels in California compared to a 2.8% decline economy wide (Table 1.2). Yet those industries that fall within the Arts, Entertainment, and Recreation sectors remain among the worst affected by the pandemic; employment was down by nearly 23% between 2018 and 2021 statewide, which was significantly greater than the 18.7% decline for the United States overall. Although California outperformed the United States by a wide margin in three areas—Utilities, Transportation & Warehousing, and Health Care & Social Assistance—it generally suffered heavier losses in any given sector where employment declined both at the state and national levels. That said, nationwide, the labor market is extremely tight in California as it is across the country (Figure 1.5). Job openings are still hovering

[8] Angst, Maggie and Lindsey Holden. "Gavin Newsom unveils $297 billion budget with a deficit after years of surplus." The Sacramento Bee. January 18, 2023. Retrieved from: https://www.sacbee.com/news/politics-government/capitol-alert/article270961327.html.

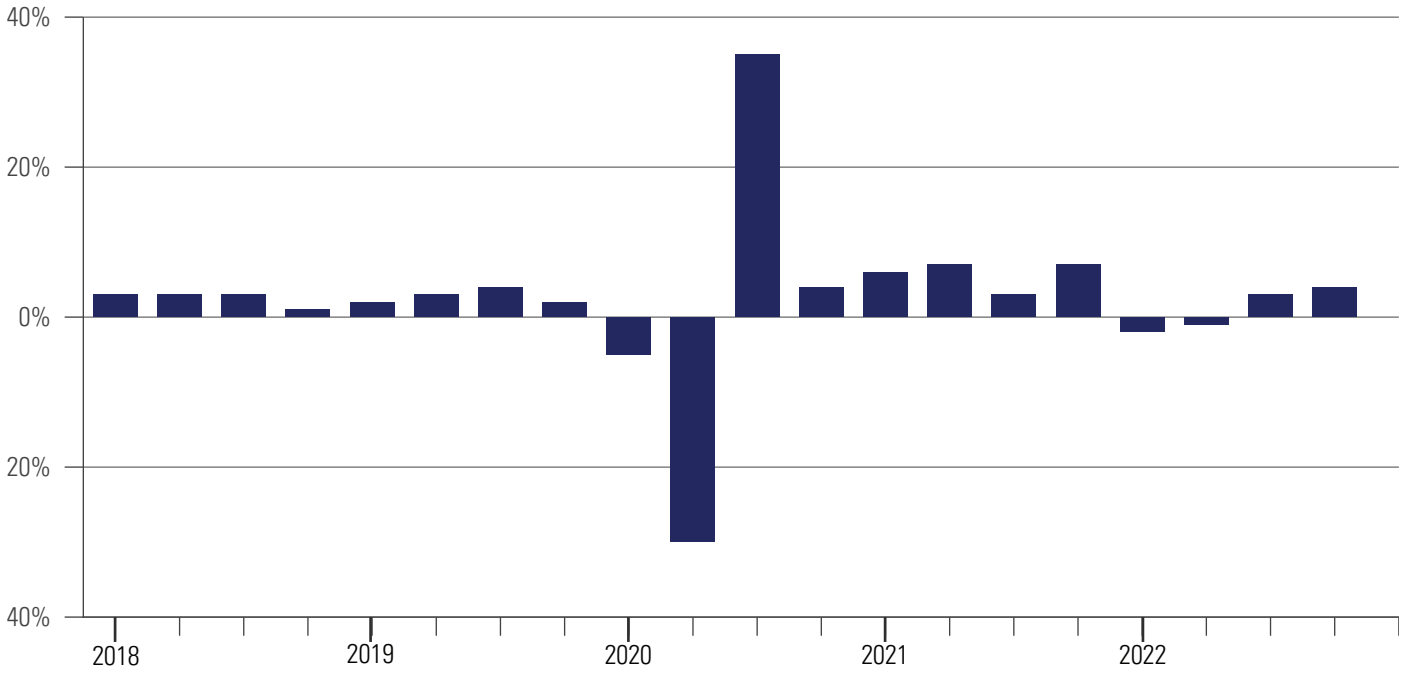
around historic highs, but labor force participation rates across gender, racial and/or ethnic lines have not returned to where they were prior to the pandemic, with the exception of Black men and Asian women (Figure 1.6).

Inflation

Inflation rates have been declining in recent months (Figure 1.7), but the cost of core services and housing continue to rise while food and energy prices remain at elevated levels (Figure 1.8). With labor demand high and wages increasing as a result, though, overall spending per capita on goods and services is still at all-time highs (Figure 1.9). What this means for the creative sectors is unclear. On the one hand, consumer spending for many creative industries increased over the two years when inflation was on the rise; expenditures per capita went up significantly between the fourth quarter of 2019 and the third quarter of 2022 for recreational durable goods (52.6%), furniture (21.0%), and clothing (19.7%).

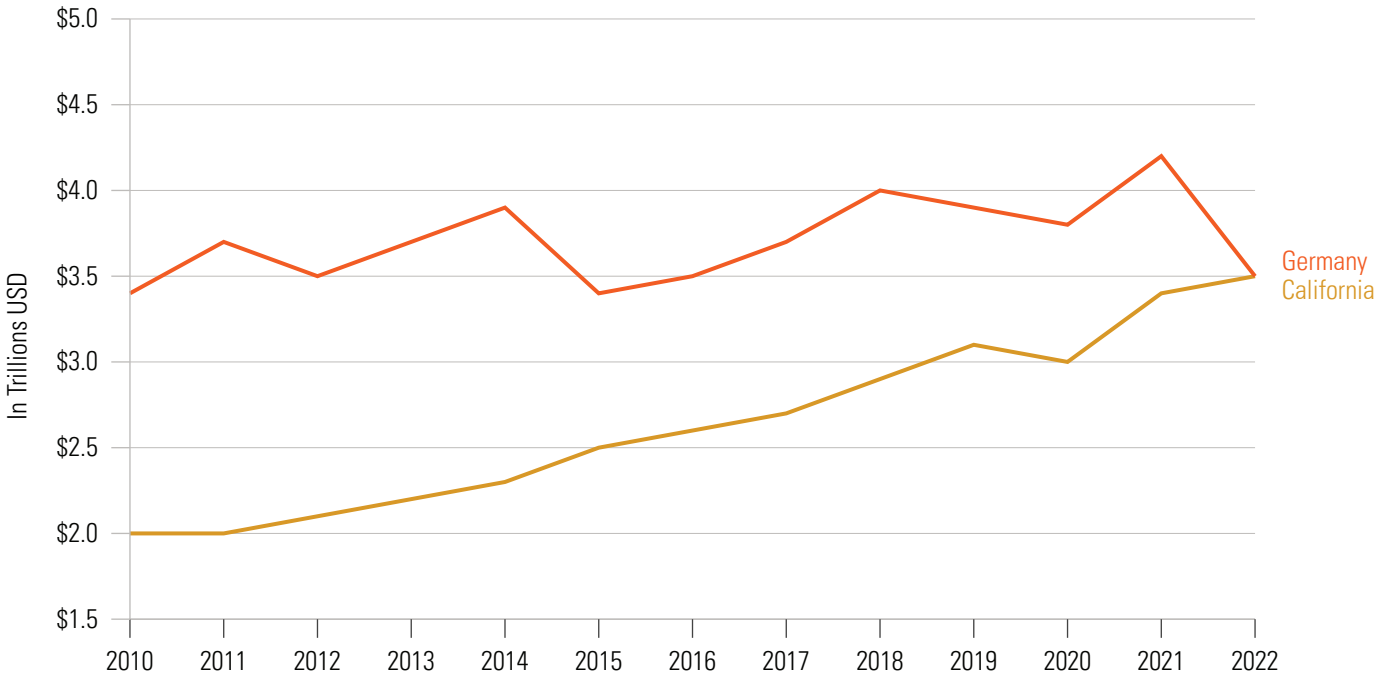
On the other hand, discretionary spending is likely to decrease as the effects of higher interest rates ripple through the economy. Spending on residential fixed investment and recreational services fell by 32.7% and 4.5% over the same period, which suggests sectors like Architecture & Related Services and Fine & Performing Arts may continue to face headwinds statewide. There is no doubt several creative sectors have experienced acute inflationary pressures. Creative Goods & Products (among industries within other creative sectors) have seen the cost of material inputs increase. Production costs have never been immune from fluctuation, but the sustained increase in the costs of textiles, plywood, steel and other necessary materials has been a challenge.

FIGURE 1.1: REAL GROSS DOMESTIC PRODUCT QUARTERLY PERCENTAGE GROWTH IN THE UNITED STATES
2018 to 2022 | Seasonally Adjusted Annual Rate



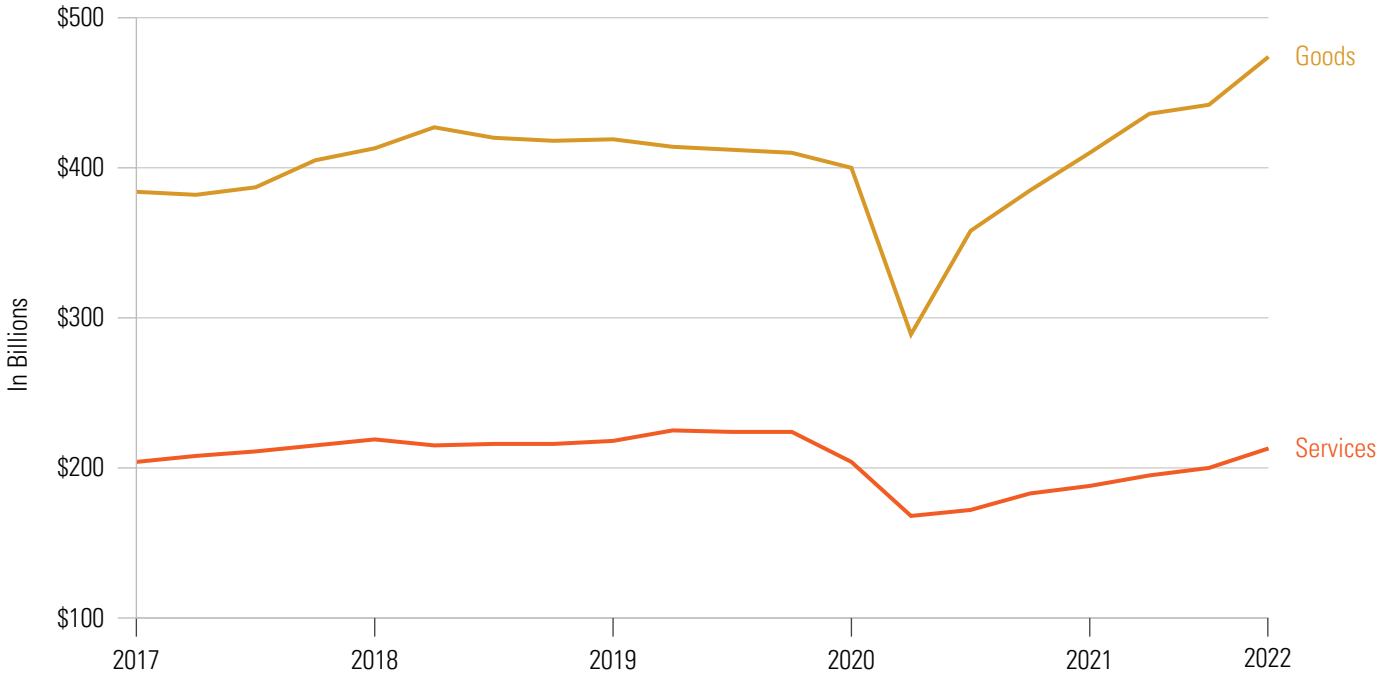
Source: U.S. Bureau of Economic Analysis

FIGURE 1.2: GDP COMPARISON BETWEEN CALIFORNIA AND GERMANY
2010 to 2022



Source: Bloomberg

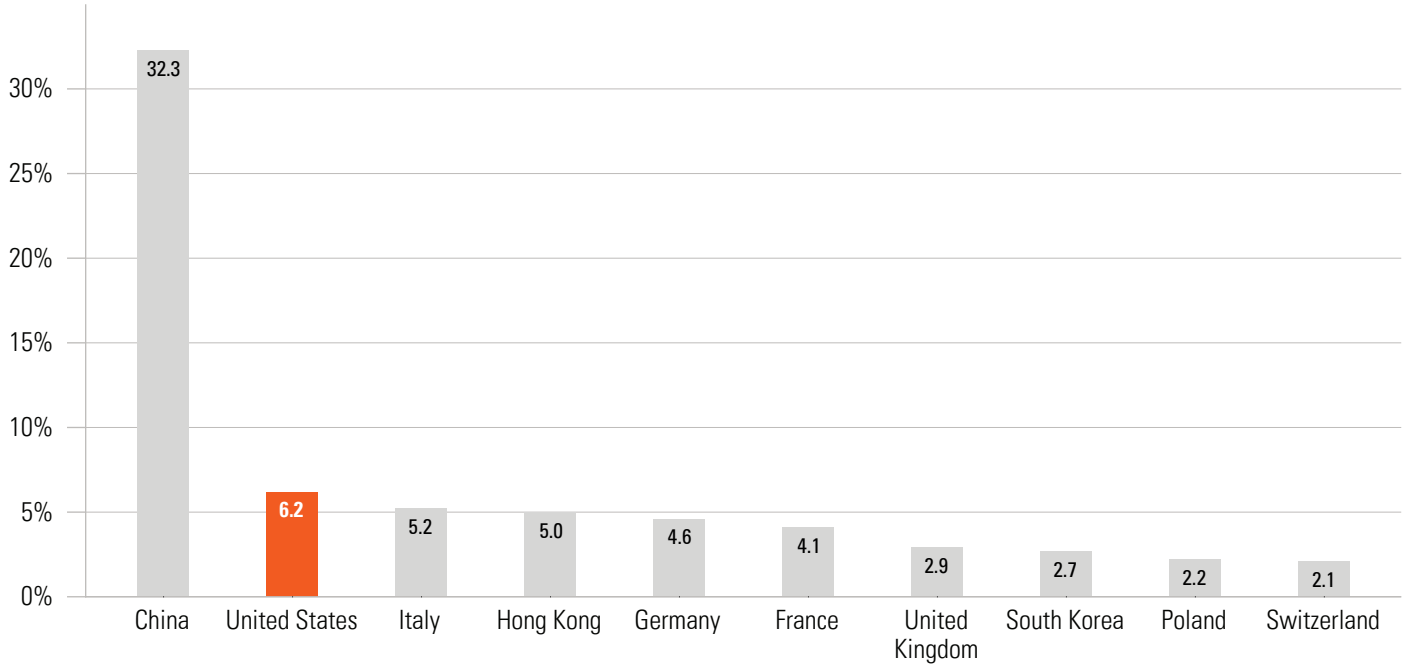
FIGURE 1.3: U.S. EXPORTS IN GOODS AND SERVICES
2017 to 2021



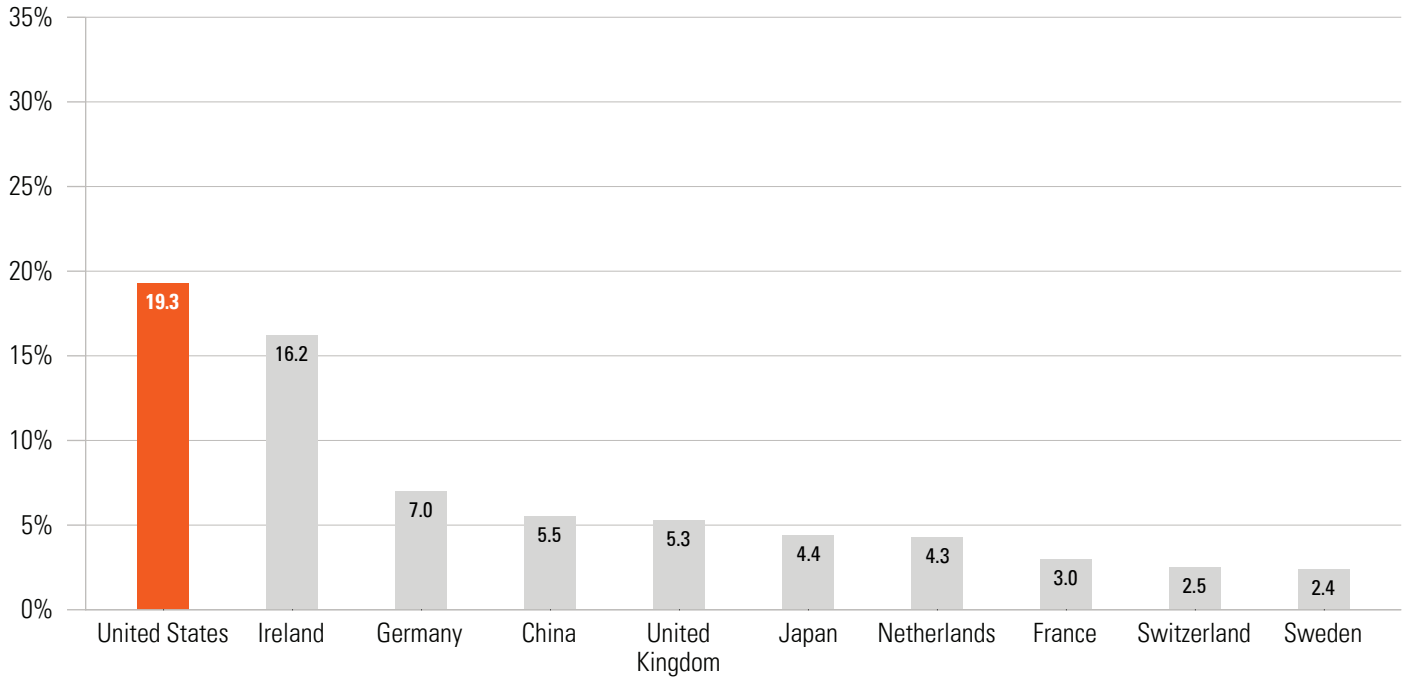
Source: U.S. Bureau of Economic Analysis

FIGURE 1.4: TOP EXPORTERS OF CREATIVE GOODS AND SERVICES BY GLOBAL SHARE
2020

(A) CREATIVE GOODS



(B) CREATIVE SERVICES



Source: United Nations Conference on Trade and Development

TABLE 1.1: U.S. EXPORTS FOR SELECT CREATIVE ECONOMY SERVICES
2021

	U.S. EXPORT VALUE	5-YEAR CHANGE
Video Games and Other Computer Software, including end-user licenses and customization	$29.2 Billion	54.2%
Advertising and Related Services	$23.6 Billion	33.9%
Audiovisual Services	$16.1 Billion	-24.7%
Licenses to reproduce and/or distribute Audiovisual Products *	$4.3 Billion	2.5%
Architectural Services	$769 Million	-17.0%
Artistic Related Services	$501 Million	-29.5%
News Agency Services	$275 Million	-7.1%

*Accounts for the rights to reproduce and/or distribute. An example would be a U.S. movie studio selling reproduction/ distribution rights to a German company to distribute the movie in Europe. Includes: Movies, television programming, books and sound recordings, broadcasting, and recording of live events.

Source: U.S. Bureau of Economic Analysis

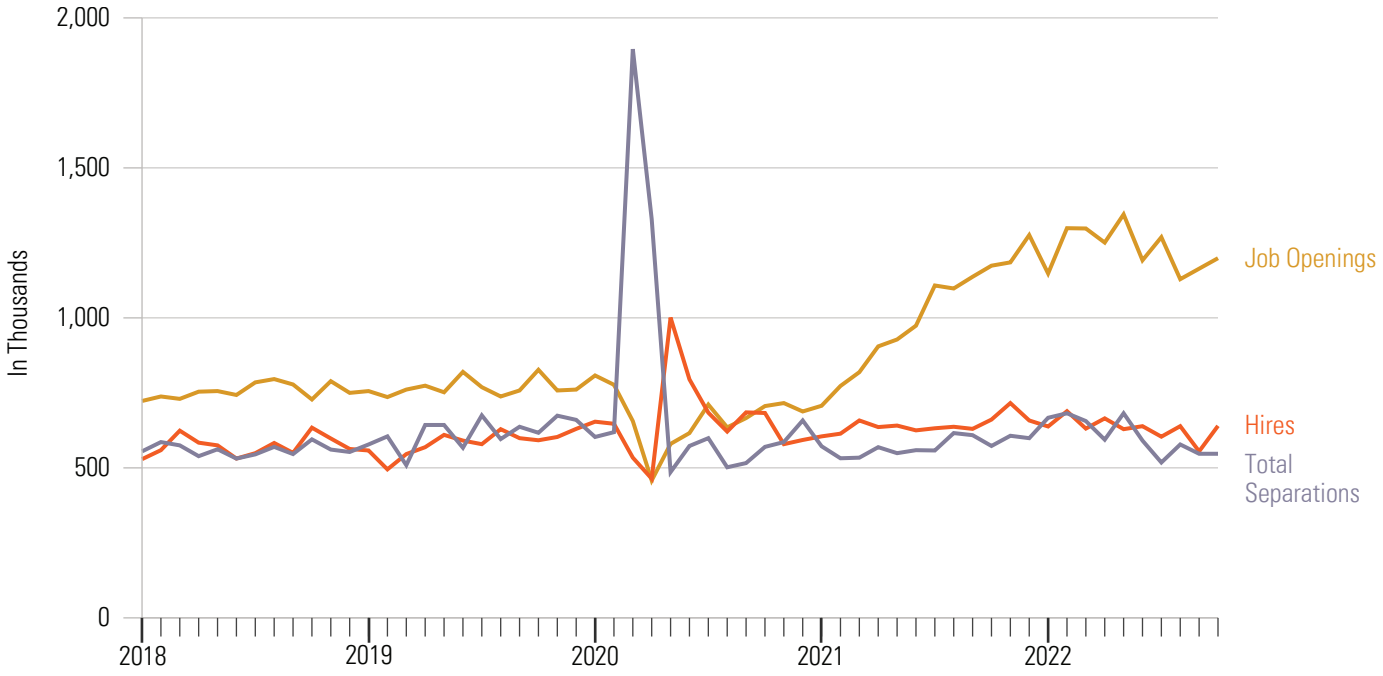
TABLE 1.2: CHANGE IN SALARIED EMPLOYMENT BY SECTOR IN CALIFORNIA AND THE UNITED STATES
2018 to 2021

	CALIFORNIA			UNITED STATES		
	2018	2021	% Change	2018	2021	% Change
Creative Economy	**1,874,726**	**1,831,323**	**-2.3%**	**11,259,686**	**10,975,390**	**-2.5%**
Agriculture, Forestry, Fishing and Hunting	508,417	495,281	-2.6%	3,639,888	3,611,463	-0.8%
Mining, Quarrying, and Oil and Gas Extraction	40,893	31,045	-24.1%	1,182,566	885,976	-25.1%
Utilities	60,198	63,816	6.0%	590,340	587,660	-0.5%
Construction	1,236,986	1,266,309	2.4%	11,215,649	11,477,509	2.3%
Manufacturing	1,426,301	1,375,193	-3.6%	13,462,819	13,069,972	-2.9%
Wholesale Trade	789,080	726,913	-7.9%	6,464,945	6,259,275	-3.2%
Retail Trade	2,083,369	1,960,984	-5.9%	19,240,967	18,551,757	-3.6%
Transportation and Warehousing	1,131,108	1,313,058	16.1%	8,714,976	9,835,292	12.9%
Information	636,497	668,279	5.0%	3,500,725	3,507,473	0.2%
Finance and Insurance	1,111,834	1,080,911	-2.8%	10,718,240	10,777,499	0.6%
Real Estate and Rental and Leasing	1,208,396	1,133,370	-6.2%	9,485,010	9,022,094	-4.9%
Professional, Scientific, and Technical Services	2,076,984	2,122,597	2.2%	14,283,316	14,832,727	3.8%
Management of Companies and Enterprises	286,439	273,988	-4.3%	2,723,357	2,699,478	-0.9%
Administrative and Support and Waste Management and Remediation Services	1,537,468	1,515,969	-1.4%	12,444,516	12,295,067	-1.2%
Educational Services	562,261	590,997	5.1%	4,905,878	5,132,659	4.6%
Health Care and Social Assistance	2,722,751	2,821,806	3.6%	22,671,290	22,860,842	0.8%
Arts, Entertainment, and Recreation	680,208	524,455	-22.9%	4,678,910	3,801,698	-18.7%
Accommodation and Food Services	1,835,275	1,561,432	-14.9%	15,013,167	13,285,625	-11.5%
Other Services (except Public Administration)	1,559,169	1,399,711	-10.2%	11,934,801	11,047,269	-7.4%
Government	2,799,215	2,695,067	-3.7%	24,557,065	23,943,437	-2.5%
Unclassified Industry	9,797	2,101	-78.6%	127,916	193,660	51.4%
Total Economy	**24,302,645**	**23,623,285**	**-2.8%**	**201,556,343**	**197,678,430**	**-1.9%**

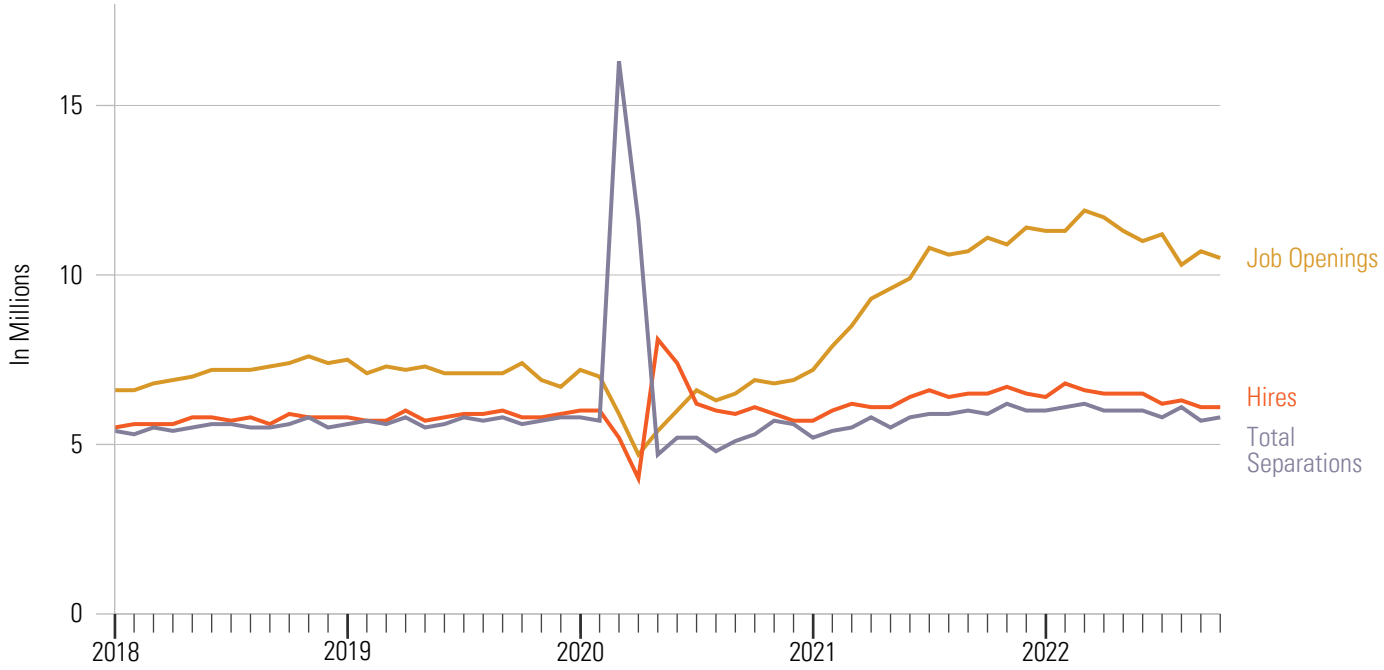
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages

FIGURE 1.5: JOB OPENINGS AND LABOR TURNOVER
2018 to 2022 | Seasonally Adjusted

(A) CALIFORNIA



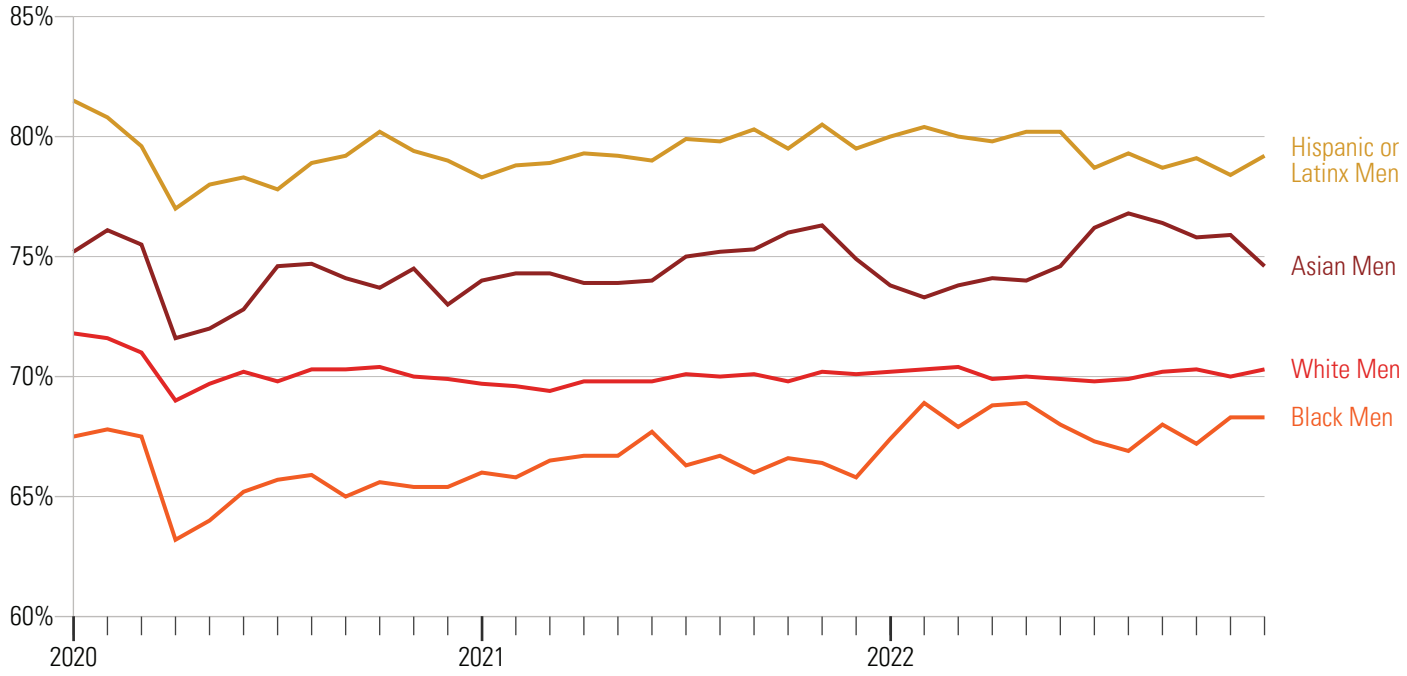
(B) UNITED STATES



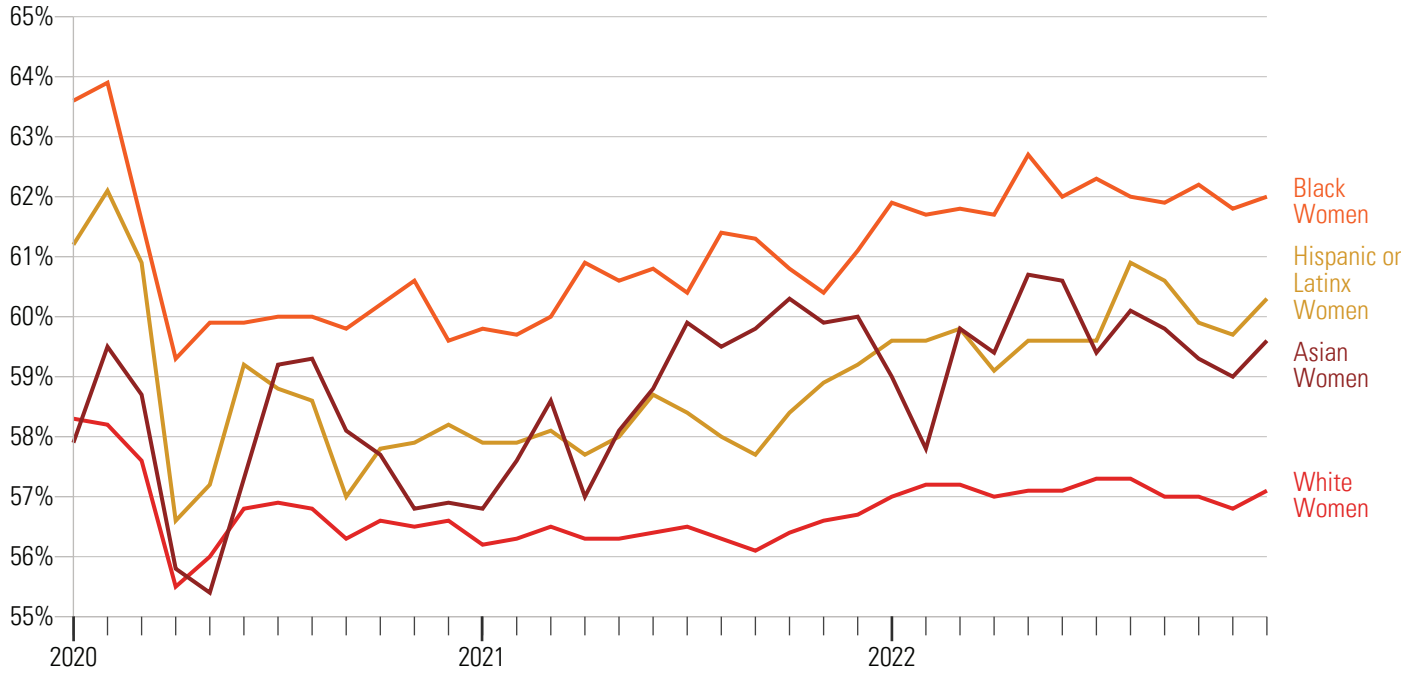
Source: U.S. Bureau of Labor Statistics Job Opening and Labor Turnover Survey

FIGURE 1.6: LABOR FORCE PARTICIPATION RATES BY GENDER AND RACE
January 2018 to December 2022

(A) MALE CIVILIAN POPULATION, AGE 20 YEARS AND OLDER



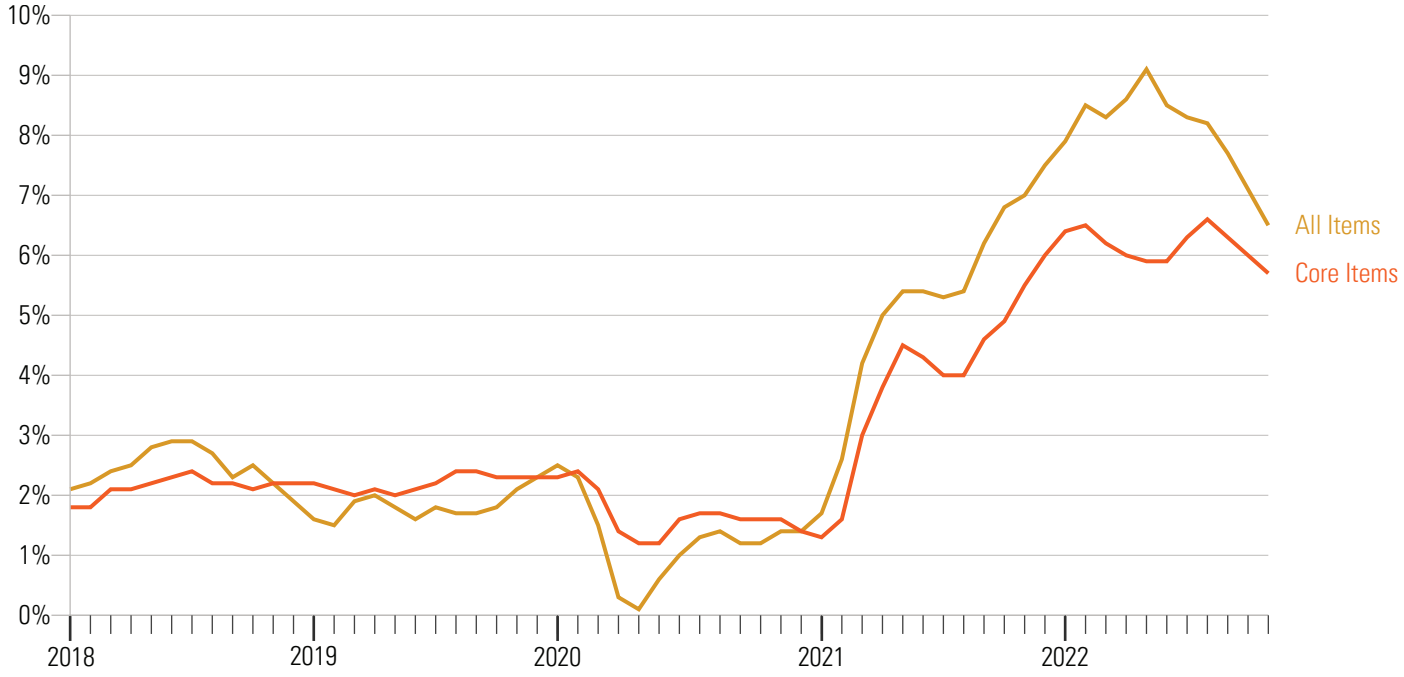
(B) FEMALE CIVILIAN POPULATION, AGE 20 YEARS AND OLDER



Note: Labor force participation rates are seasonally adjusted for all categories, except Asian Men and Asian Women

Source: U.S. Bureau of Labor Statistics Current Population Survey

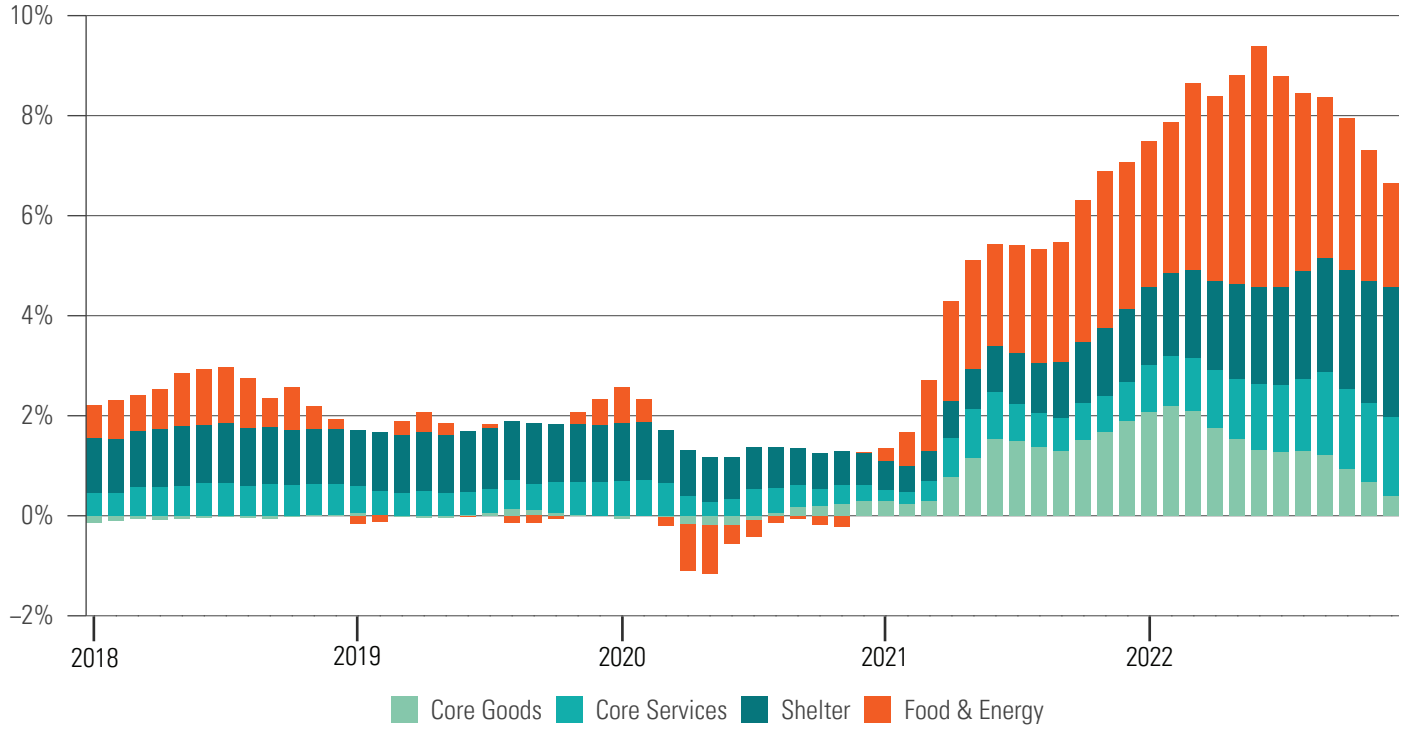
FIGURE 1.7: CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS (CPI-U)
January 2018 to December 2022 | 12-Month Growth, Not Seasonally Adjusted



Note: Core items do not include energy or food prices

Source: U.S. Bureau of Labor Statistics

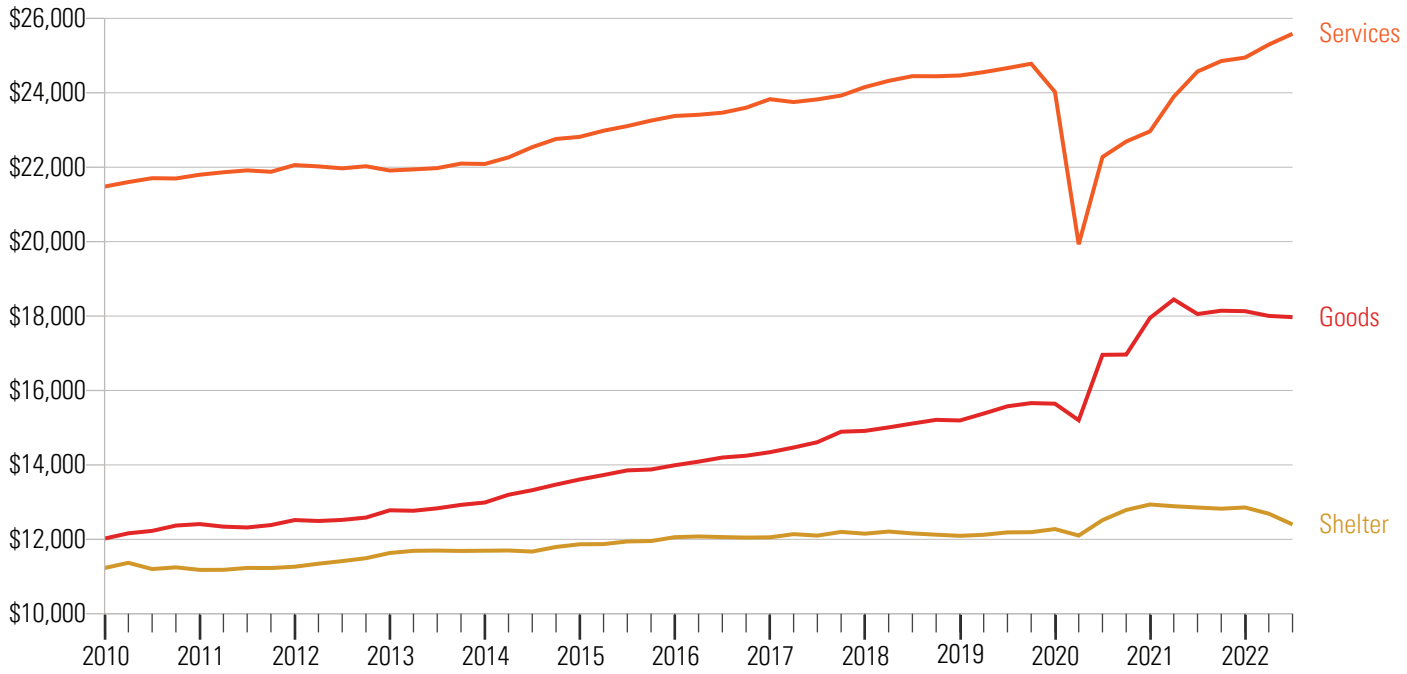
FIGURE 1.8: CONTRIBUTORS TO 12-MONTH CHANGE IN CPI-U
January 2018 to December 2022 | Not Seasonally Adjusted



Source: U.S. Bureau of Labor Statistics

FIGURE 1.9: EXPENDITURE PER CAPITA BY TYPE

(A) 2010 Q1 TO 2022 Q3 | 2022 Q3 DOLLARS



(B) 2019 Q4 TO 2022 Q3 | 2022 Q3 DOLLARS (ANNUALIZED)

	2019 Q4	2022 Q3	% CHANGE
Goods	**$15,661**	**$17,971**	**14.8%**
Motor Vehicles and Parts	$2,059	$2,140	3.9%
Furniture and Household Equipment	$1,322	$1,599	21.0%
Recreational Durable Goods	$1,289	$1,967	52.6%
Groceries	$3,766	$3,871	2.8%
Clothes and Shoes	$1,251	$1,497	19.7%
Services	**$24,781**	**$25,587**	**3.3%**
Health Care Services	$8,154	$8,231	0.9%
Transportation	$1,780	$1,682	-5.5%
Recreational	$1,954	$1,866	-4.5%
Food and Accommodation	$3,587	$3,833	6.9%
Financial and Insurance	$3,663	$3,964	8.2%
Shelter	**$12,192**	**$12,400**	**1.7%**
Housing Services and Utilities	$8,901	$9,084	2.1%
Residential Fixed Investment	$3,291	$2,215	-32.7%
Total	$49,406	$52,643	6.6%

Source: U.S. Bureau of Economic Analysis

PART 2:

THE CREATIVE SECTORS

The creative economy is crucial to the vibrancy and strength of California's economy, directly contributing 14.9% ($507.4 billion) of the state's $3.4 trillion economy. Accounting for the sector's ripple effects such as business-to-business transactions (indirect impacts) and employee spending (induced impacts), the creative economy generated nearly $980 billion statewide in 2021.

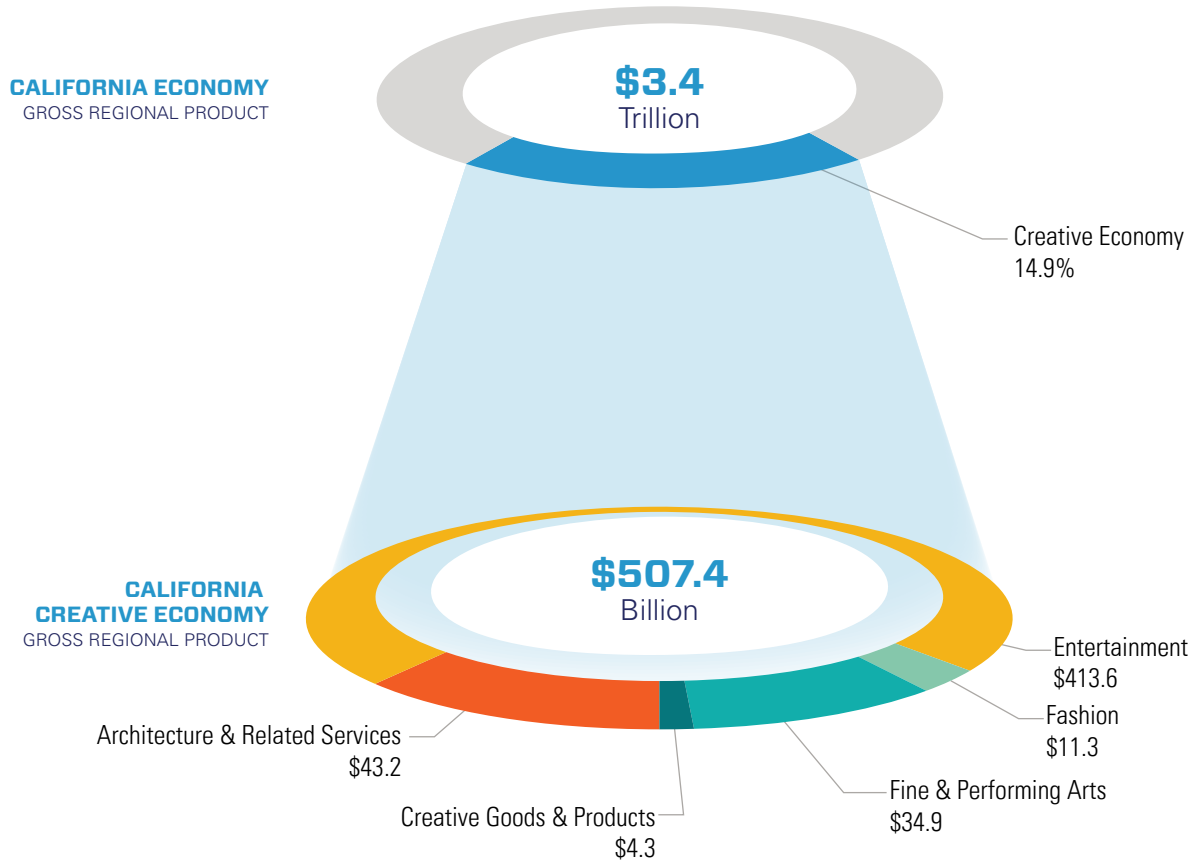
Despite the disproportionate impact the COVID-19 pandemic had on creative sectors, the creative economy outperformed the recovery of the overall economy both statewide and in Los Angeles County. In California, creative economy employment sat 2.3% below pre-pandemic (2018) levels while the overall economy was 3.0% lower. In Los Angeles County, creative economy employment was 2.1% below pre-pandemic levels while the overall economy was 3.5% lower.

This outsized performance was driven by the large footprints and overall resilience of the Entertainment and Architecture & Related Services sectors. Statewide, Entertainment accounted for 81.5% of creative economy gross regional product (GRP), followed by Architecture & Related Services accounting for 8.5%. By contrast, the remaining creative sectors—Fashion, Creative Goods & Products, and Fine & Performing Arts, which combined account for just 10% of creative GRP—were devastated by the pandemic and have struggled to recover and grow.

The pandemic accelerated technology trends as households shifted from the physical to digital realms amid stay-at-home orders, business shutdowns, and public health concerns. It is no surprise that Entertainment, as the most tech-driven sector in the creative economy, experienced explosive growth as people began streaming media and gaming at unprecedented levels. Certain gaming elements, such as Epic Games' Unreal Engine, are spilling over into Architecture & Related Services with virtual worldbuilding gaining traction as both a tool and a product.

The rise in digital platforms like Poshmark and Etsy helped the Creative Goods & Products and Fashion sectors rebound from long-term declining employment trends between 2020 and 2021. Conversely, Fine & Performing Arts, which saw its workforce expand rapidly in the years preceding the pandemic, is still struggling to find its footing in the virtual environment as smaller local companies and venues continue to feel the effects of low attendance, limited capacity, and uneven public sector support.

FIGURE 2.1: CREATIVE ECONOMY SHARE OF CALIFORNIA'S TOTAL GROSS REGIONAL PRODUCT
2021



Source: U.S. Bureau of Economic Analysis; IMPLAN

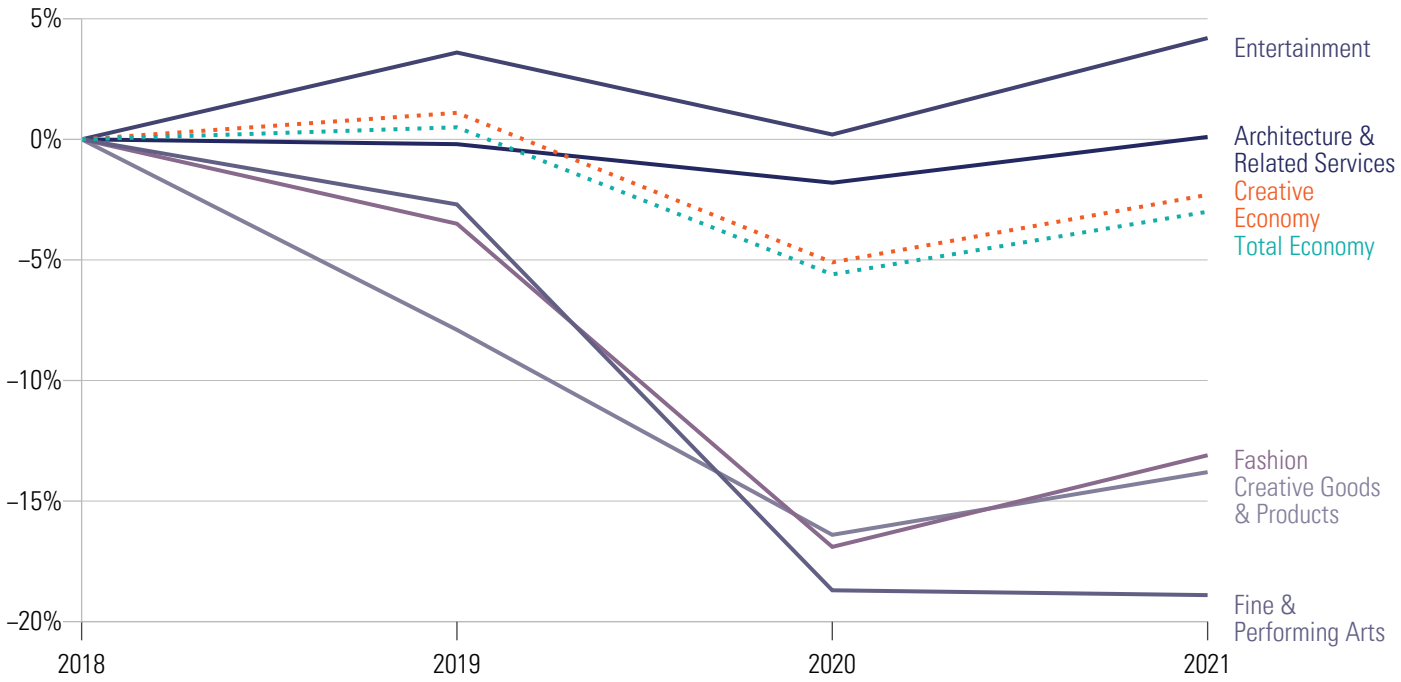
TABLE 2.1: CREATIVE ECONOMY EMPLOYMENT SHARE IN CALIFORNIA AND NEW YORK STATE
2021

	CALIFORNIA		NEW YORK	
	Creative Sector Jobs	Share of All Jobs	Creative Sector Jobs	Share of All Jobs
Entertainment	1,127,268	4.8%	542,321	4.5%
Fine & Performing Arts	314,314	1.3%	196,573	1.6%
Architecture & Related Services	284,776	1.2%	118,642	1.0%
Creative Goods & Products	42,293	0.2%	17,739	0.1%
Fashion	62,671	0.3%	25,907	0.2%
Creative Economy	**1,831,323**	**7.8%**	**901,182**	**7.5%**
Total Economy	**23,529,045**		**11,957,967**	

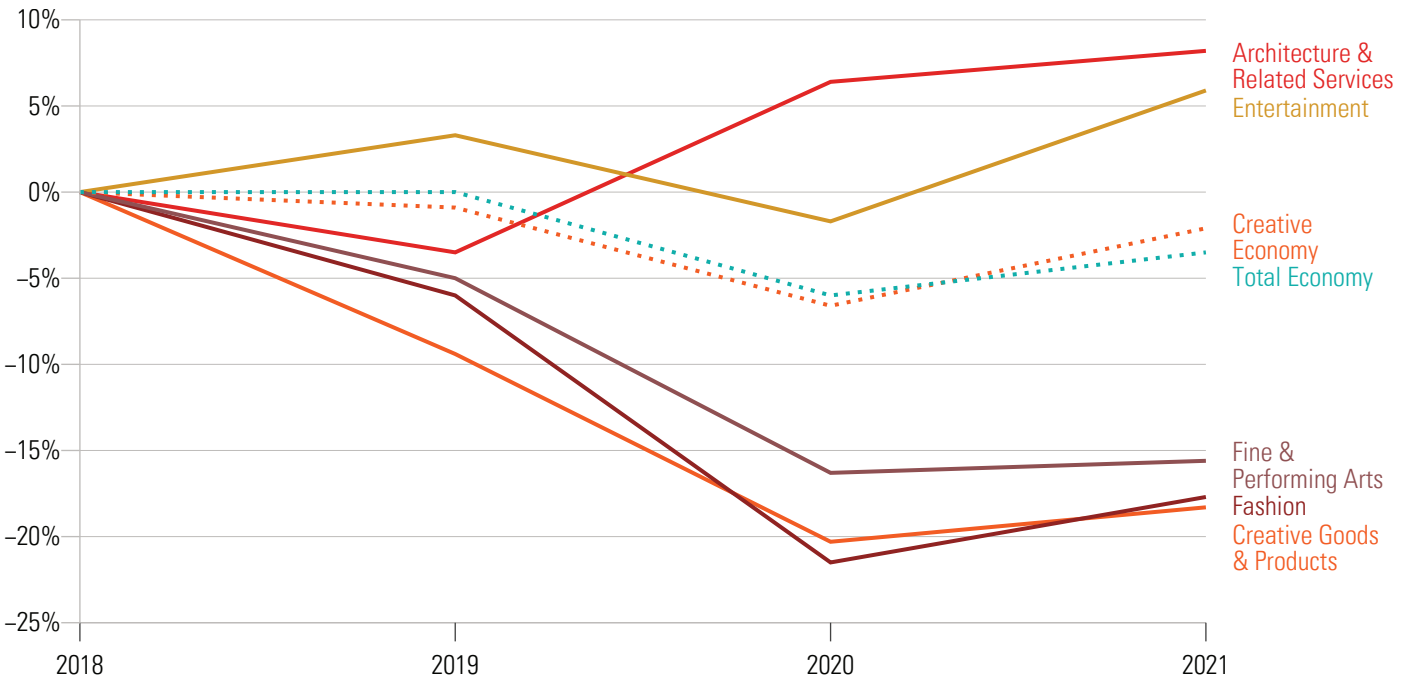
Source: U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages

FIGURE 2.2: TOTAL VS. CREATIVE SECTOR EMPLOYMENT IN CALIFORNIA AND LOS ANGELES COUNTY
2018 to 2021

(A) CALIFORNIA



(B) LOS ANGELES COUNTY



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

Economic Impact Analysis

Combining all the channels of impact—direct, indirect (supply chain), and induced (wage spending)—the creative economy in California supported over 5.1 million workers in California, produced $978.6 billion in economic activity, and generated $194.1 billion in taxes for all levels of government (federal, state, and local) in 2021.

- Direct Contribution: The direct impact of the creative economy comprises the value added output generated by the sector: those employed directly by firms in the five sectors, the wages these firms pay, their operation expenditures, and the taxes paid. In 2021, this direct impact accounted for $507.4 billion in GRP and $295.4 billion in employee income (wages).

  A comparison of the total economic impact with the direct sector impact reveals how, for every $100 of value-added output created by the creative economy in California, an additional $190 of value added is created in other sectors of the state's economy because of supply chain and employee expenditure impacts. This means that the sector has a value-add multiplier impact of 1.9.

- Indirect Contribution: The indirect impact of the creative economy reflects the employment and GRP contribution made by the suppliers of those establishments in the sector (e.g., security providers, IT support, and legal services) and, in turn, within the supply chains of those suppliers. In 2021, the GRP contribution of these suppliers was $236.9 billion, including $153.6 billion in employee compensation.

- Induced Contribution: The induced impact of the creative economy estimates the economic activity supported by the consumer spending of wages by those employed directly by the creative sectors or those in their supply chains. As a result of this spending, the induced economic impact attributable to the creative economy was $234.4 billion in 2021. This includes $132.6 billion in employee compensation.

TABLE 2.2: ECONOMIC IMPACT OF THE CREATIVE ECONOMY IN CALIFORNIA AND LOS ANGELES COUNTY 2021

(A) CALIFORNIA

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	1,831,323 jobs	1,504,383 jobs	1,810,575 jobs	5,146,281 jobs
Labor Income	$295.4 Billion	$153.6 Billion	$132.6 Billion	$581.7 Billion
Gross Value Added	$507.4 Billion	$236.9 Billion	$234.4 Billion	$978.6 Billion
Tax Revenue	-	-	-	$194.1 Billion

(B) LOS ANGELES COUNTY

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	685,363 jobs	425,420 jobs	413,009 jobs	1,523,793 jobs
Labor Income	$86.0 Billion	$40.3 Billion	$28.2 Billion	$154.5 Billion
Gross Value Added	$161.0 Billion	$66.3 Billion	$50.1 Billion	$277.4 Billion
Tax Revenue	-	-	-	$50.2 Billion

Note: Results reported in 2022 dollars. Direct contributions comprise the value-added output generated by firms, labor income, and taxes on production for a given creative sector. Indirect contributions reflect the employment and GRP contribution made by the suppliers of those establishments in the sector and, in turn, within the supply chains of those suppliers. Induced contributions estimate the economic activity supported by the consumer spending of wages by those employed directly by the creatives sectors or those in their supply chains.

TECHNOLOGY SPOTLIGHT: THE CREATIVE SECTORS

Extending Reality

Video games have long since evolved from the days of the Atari home console, and the increasingly complex technology on which they are built are now giving rise to an expanding roster of new expressive applications. An amalgam of traditional art forms—such as painting, writing, sculpture, music, storytelling, and cinematography—gaming technology offers previously unprecedented methods of communication and engagement. The ability to support real-world complexity at photorealistic levels is inspiring new possibilities across both creative and non-creative sectors throughout the economy.

To appreciate the potential of this technology, it is important to understand the landscape. Extended reality (XR) is an umbrella term for all immersive technologies, including augmented reality (AR), virtual reality (VR), and mixed reality (MR), in addition to those yet to be created. XR technologies extend the reality we experience by either merging the virtual and physical worlds or by creating a fully immersive experience. The last few years have offered a lot of hype around the metaverse. But it is important not to think of the metaverse as a fixed end point in the evolution of technology; there are emerging opportunities for creatives and entrepreneurs within varied forms of digitization across the extended reality spectrum.

Video games (or simply "gaming") are one of the most popular and well-established forms of interactive entertainment and, by association, are linked with extended reality. As some of the early pioneers of immersive experiences, game developers have created the infrastructure and capabilities to build virtual worlds. But it is important not to confound the software and expertise with the products and industries that will be impacted by advances in extended reality. The Unreal Engine and Unity gaming engines, which are currently being deployed in all five creative sectors to varying degrees, serve as the major foundational software for virtual reality development. The Technology Spotlights that appear throughout this report highlight some of these applications and provide insights into the many ways "gaming" is serious business.

FIGURE 2.3: THE EXTENDED REALITY SPECTRUM

EXTENDED REALITY (XR)

Umbrella term for any technology that alters reality by adding digital elements to the real-world environment

VIRTUAL REALITY (VR)

View of a fully immersive digital environment

MIXED REALITY (MR)

Blend of real-world and digital elements that interact with each other

AUGMENTED REALITY (AR)

View of the physical world with an overlay of digital elements

HIGH VIRTUAL IMMERSION
Virtual World

- Volkswagen Assembly Training
- Marriott International's VRoom Service
- The Weather Channel's Immersive Mixed Reality Segments
- Virtual Production for Film and Television
- Ikea Furniture Fitting Place Application
- Warby Parker Glasses Fitting
- Maybelline's Virtual Makeup Application
- Pokemon Go
- Instagram, Snapchat, and Zoom Filters
- Traditional Film and Television
- Photography

LOW VIRTUAL IMMERSION
Physical World

Source: Interaction Design Foundation, CVL Economics

Extended Reality Glossary

Web3: Web3 (or Web 3.0) is often considered to be the "next generation" of the internet that aims to connect and engage users on a larger scale. While Web2 refers to the internet we know today, where 2-D web pages require scrolling and clicking in order to interact, Web3 looks to take this further by introducing more immersive websites and platform designs.

Virtual World: A virtual world can be both a simulated version of the real world or a made-up environment. In most cases, virtual worlds are generated as a space that can be inhabited and allow for interaction between users using avatars.

Virtual Reality (VR): Virtual reality refers to an immersive, computer-generated environment where users can be fully immersed in a simulated reality. To access such a space, products like VR headsets are used, providing a 360-degree view of a virtual world and allowing for the possibility of movement and interaction.

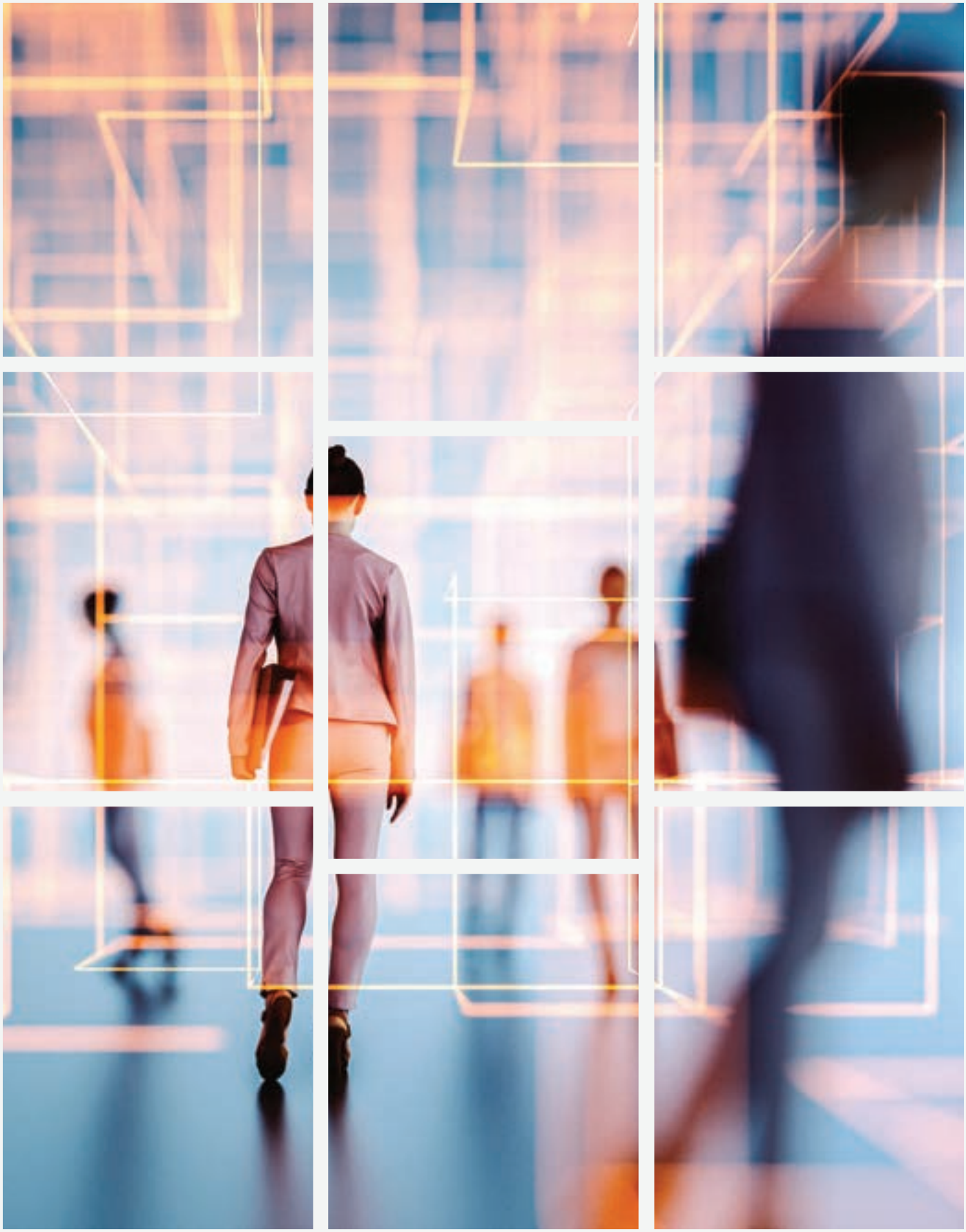
Augmented Reality (AR): Augmented reality overlays digitally generated images (or information) onto the real world. The feature can often be accessed through a device like a mobile phone, where, through a camera function, users can view real life environments with overlaid graphics. Social media apps like Instagram and Snapchat utilize AR through filters and lenses that can digitally adapt a face or the real world.

Mixed Reality (MR): Mixed reality describes the merging of real world and computer-generated environments, allowing physical and digital content to be combined in a way that enables interaction throughout both.

Game Engine: Unity Technology's real-time development platform (Unity) and Epic Games' Unreal Engine are game engines used to create video games, architectural visualizations, and other interactive 3D, 2-D, and VR/AR content. They provide a wide range of tools and features for creating high-quality games and other interactive content, including a visual editor, a scripting API, and support for a variety of platforms.

The Metaverse: The metaverse is a massively scaled and interoperable network of real-time rendered 3D virtual worlds that can be experienced synchronously and persistently by an effectively unlimited number of users with an individual sense of presence, and with continuity of data, such as identity, history, entitlements, objects, communications, and payments.[9]

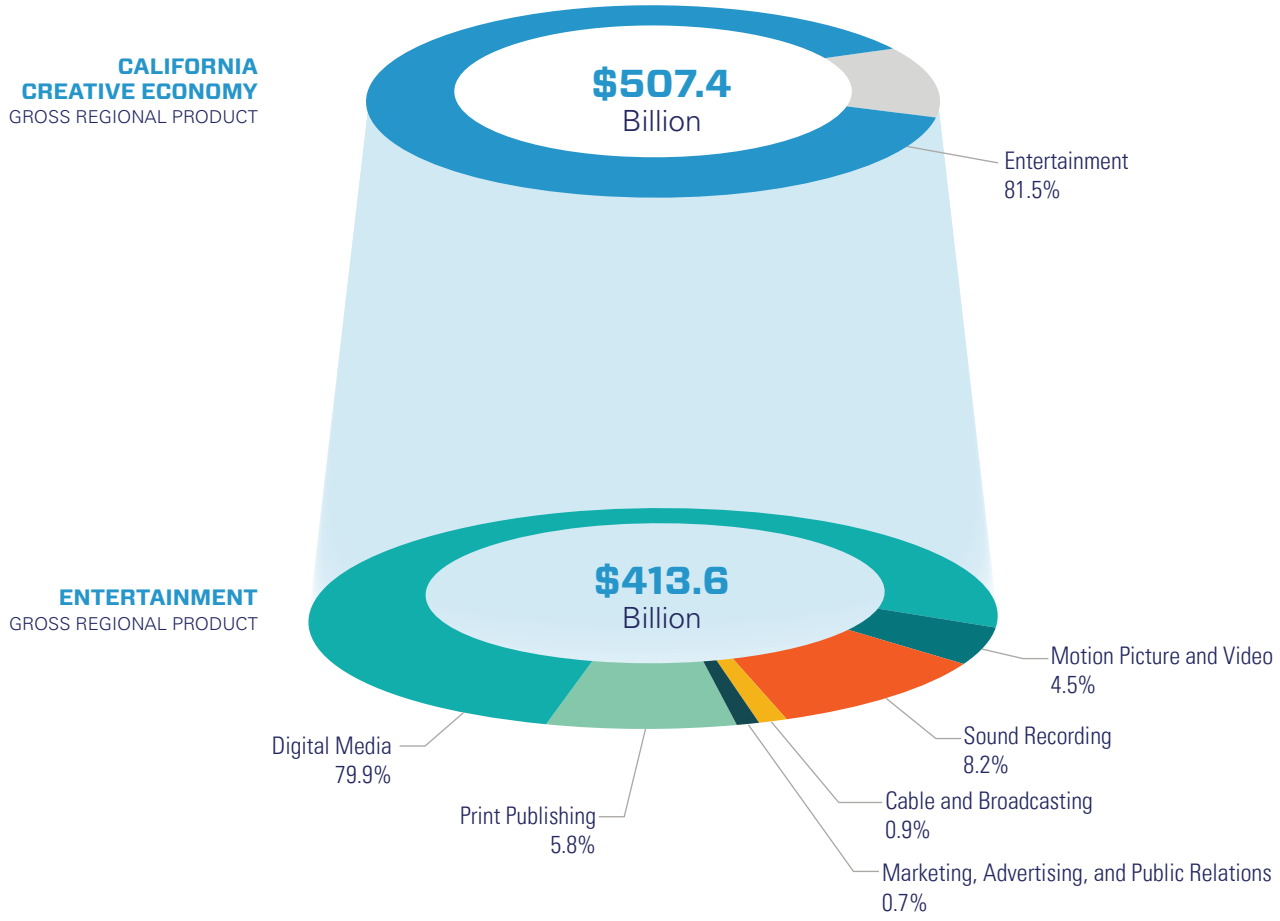
[9] Ball, Matthew. The Metaverse: And How it will Revolutionize Everything. Liveright Publishing, New York. 2022.



THE CREATIVE SECTORS

Entertainment

FIGURE 2.4: ENTERTAINMENT SHARE OF CALIFORNIA'S CREATIVE ECONOMY GROSS REGIONAL PRODUCT
2021



Note: Values reported in 2022 dollars.

Source: U.S. Bureau of Economic Analysis; IMPLAN

Entertainment is the largest creative sector in California, directly employing over 1.1 million workers and accounting for 81.5% of creative economy GRP. Accounting for ripple effects (indirect and induced), Entertainment supported the employment of approximately 4 million workers and the generation of over $800 billion in GRP statewide. The Entertainment sector was negatively impacted by the pandemic, losing about 3.3% and 4.8% of jobs in California and Los Angeles County, respectively, between 2019 and 2020. However, 2021 ushered in significant employment growth (+4.2% in California and +5.9% in Los Angeles County since 2018), outperforming the recovery of the creative economy overall in both regional levels.

Subsector Analysis

Growth in Entertainment is attributable to its tech-centric character. In 2021, despite businesses re-opening and reduced health concerns due to the development of COVID-19 vaccines, demand for many in-home services continued and were streamlined over time. This is especially true in Entertainment's two largest subsectors—Digital Media and Motion Picture & Video—which collectively account for 82% and 73% of sector employment in California and Los Angeles, respectively.

Indeed, much of the sector's growth following the onset of the pandemic is driven by the rebound of Motion Picture & Video activity. The Motion Picture & Video subsector was most impacted by the pandemic given the shuttering of film and television production, with California and Los Angeles losing 17.8% and 13.3% of subsector jobs, respectively. But the subsector also saw immense growth between 2020 and 2021, adding more jobs than were lost during the pandemic (+18.4% in California and +18.6% in Los Angeles). Employment gains were particularly significant in Los Angeles County, where film and television production more than doubled in 2021.[10] Similarly, 2021 set a record for the number of original scripted series on television, with 559 adult-scripted original series.[11]

Moreover, innovative technologies are being developed and scaled to produce high-quality visualizations for television programming that were once only the domain of the film industry. At the end of 2022, Amazon Studios unveiled its Culver City virtual production stage, the largest of its kind in the

County. Taking advantage of the multiple environments and backgrounds in one indoor location, actors can interface with the virtual elements in a more intuitive way than previously afforded by green screen technology.[12] What may have previously been cost or time prohibitive (e.g., traveling to faraway locations, rebuilding stages, or needing to film during limited daylight hours) is now more feasible with a virtual production stage. Disney+'s *The Mandalorian* was one of the first major productions to use this technology in February 2020,[13] and the potential for another wave of travel restrictions, social distancing, and higher material and labor costs in the future have only increased the appeal of virtual production across the industry since then.[14]

[10] Steigrad, Alexandra. "Hollywood production more than doubled in 2021 during COVID recovery." New York Post. January 20, 2022. Retrieved from: https://nypost.com/2022/01/20/hollywood-production-more-than-doubled-during-covid-recovery/.

[11] Schneider, Michael. "Peak TV Tally: According to FX Research, A Record 559 Original Scripted Series Aired in 2021." Variety. January 14, 2022. Retrieved from: https://variety.com/2022/tv/news/original-tv-series-tally-2021-1235154979/.

[12] Sakoui, Anousha and Wendy Lee. "Amazon Studios unveils massive virtual production stage, deepening ties to Culver City." Los Angeles Times. December 6, 2022. Retrieved from: https://www.latimes.com/entertainment-arts/business/story/2022-12-06/amazon-culver-city-virtual-production-stage-candy-cane-lane-eddie-murphy#:~:text=Virtual%20production%20technology%20uses%20advances,environment%20projected%20on%20LED%20screens.

[13] Antunes, Jose. "The Mandalorian: a test bed for Virtual Production." Provideo Coalition. April 5, 2021. Retrieved from: https://www.provideocoalition.com/the-mandalorian-a-test-bed-for-virtual-production/.

[14] Brodsky, Katherine. "Productions Embrace LED Walls as Necessary in Pandemic Times." Variety. September 10, 2021. Retrieved from: https://variety.com/2021/tv/spotlight/productions-embrace-led-walls-as-necessary-in-pandemic-times-1235060544/.

Digital Media remained resilient throughout the pandemic. In fact, Digital Media employment increased between 2019 and 2020 (+2.0% in California and an astonishing +9.2% in Los Angeles County) and continues to grow. This is driven in part by increased use of media platforms like TikTok, Instagram, Facebook, YouTube, and Twitch, which skyrocketed in 2020 during the peak of the economic shutdown. At the same time, more people are using these platforms (and more frequently) to consume content that was previously shared through more traditional outlets. For instance, these more visually focused platforms are more popular among younger generations to get their news; the use of TikTok for news coverage increased fivefold among 18- to 24-year-olds between 2020 and 2022.[15]

The rise and spread of gaming to new audiences also contributed to Digital Media's resilience in 2020 and its continuing growth. In 2020, the numbers of Americans gaming increased 31% from the year prior—in the previous two years, players grew by just 7%.[16] The gaming industry is evolving rapidly, with more and more people tuning in as gaming becomes more sociable (such as playing with or against other humans), monetizable (through in-game purchases, for instance) and interactive (through augmented and virtual reality).

[15] "Digital News Report 2022." Reuters. Accessed January 10, 2023. Retrieved from: https://www.reutersagency.com/en/digital-news-report-2022-americas/.

[16] "Into the Metaverse: Why Gaming Could Level Up in 2022." Morgan Stanley. November 12, 2021. Retrieved from: https://www.morganstanley.com/ideas/video-gaming-industry-2022.

TABLE 2.5: TOTAL ECONOMIC IMPACT OF THE ENTERTAINMENT SECTOR
2021

(A) CALIFORNIA

4 Million

JOBS

$486B

LABOR INCOME

$818B

DIRECT GROSS VALUE ADDED

$161B

TAX REVENUE

(B) LOS ANGELES COUNTY

1 Million

JOBS

$114B

LABOR INCOME

$206B

DIRECT GROSS VALUE ADDED

$38B

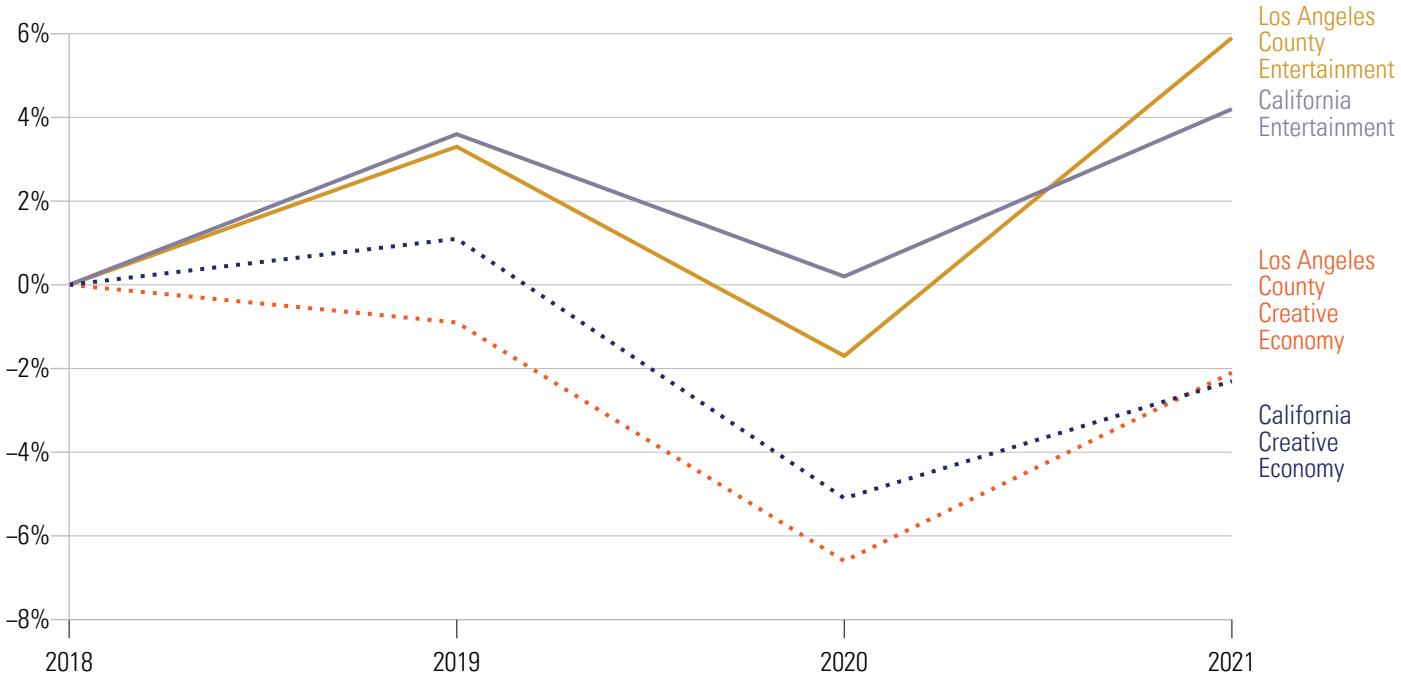
TAX REVENUE

Note: Values reported in 2022 dollars. Total economic impact comprises direct, indirect, and induced impacts. See Appendix for detailed results.

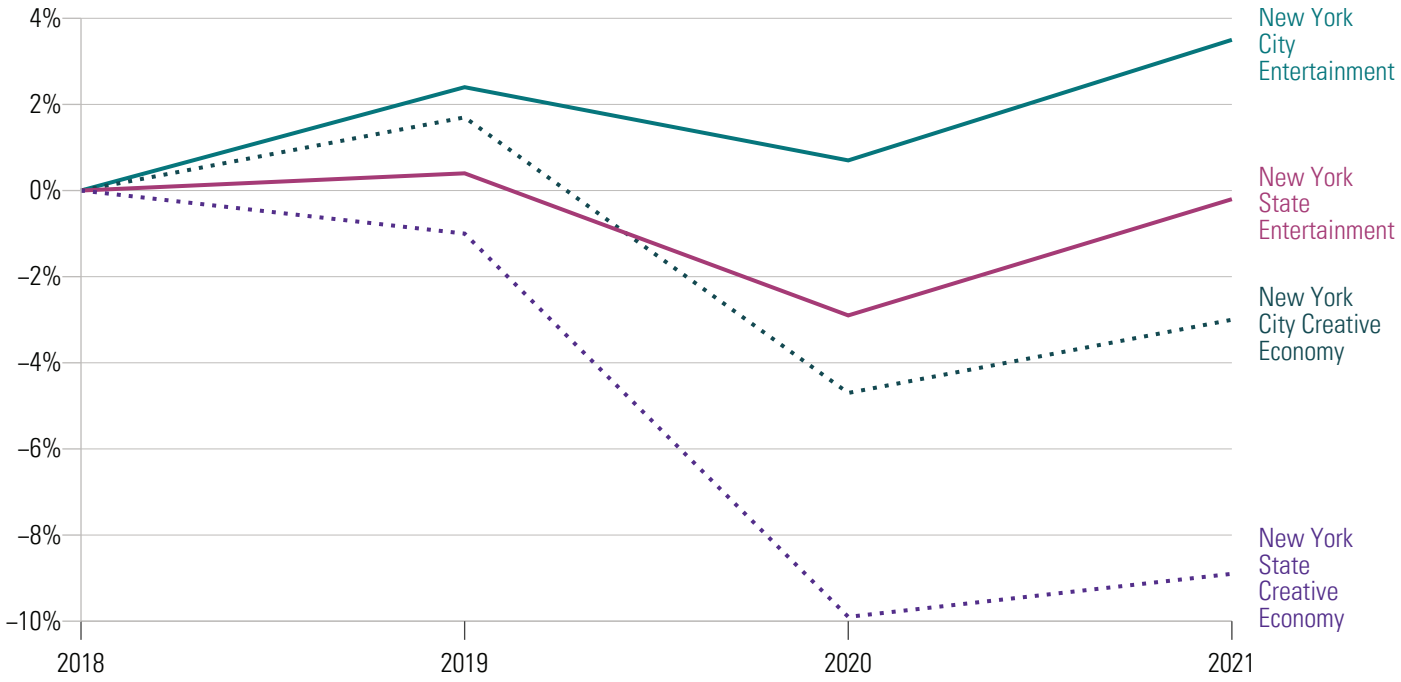
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.6: ENTERTAINMENT EMPLOYMENT GROWTH IN CALIFORNIA AND NEW YORK STATE
2018 to 2021

(A) CALIFORNIA AND LOS ANGELES COUNTY



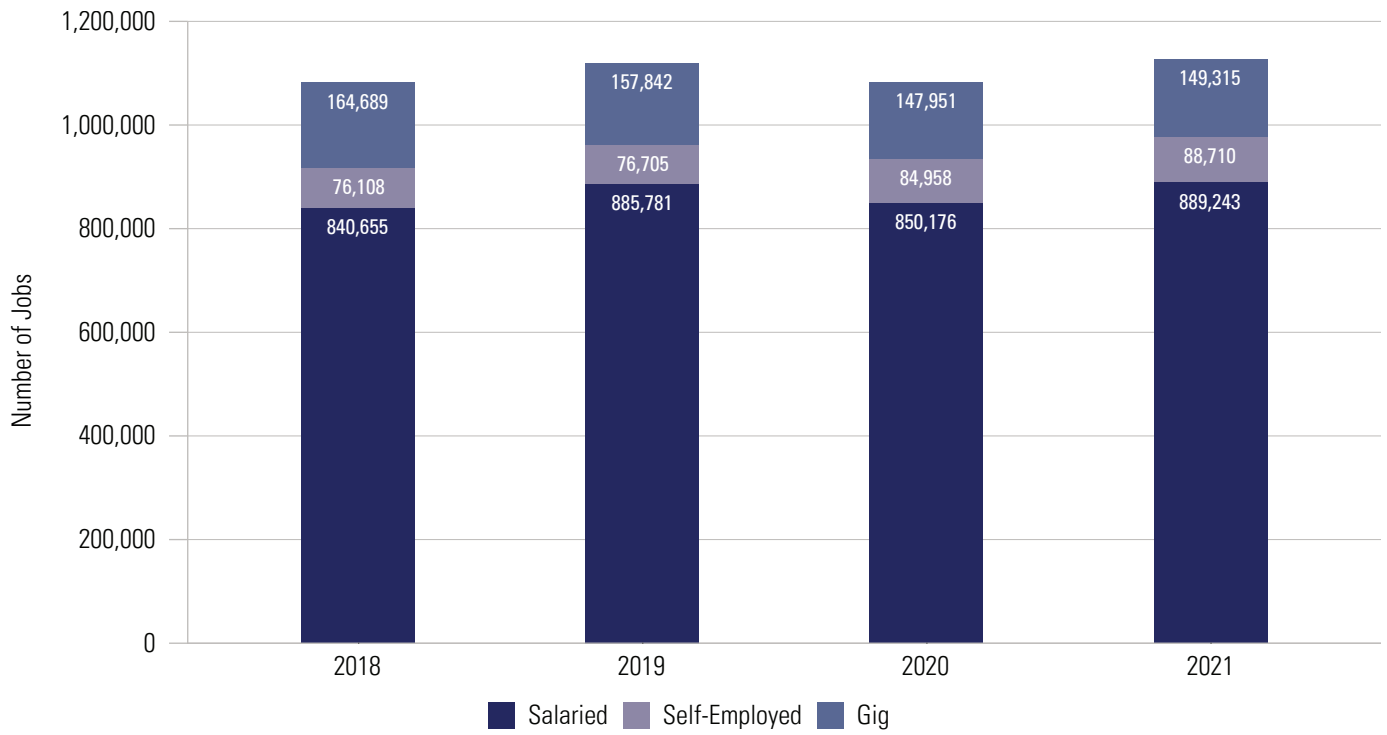
(B) NEW YORK STATE AND NEW YORK CITY



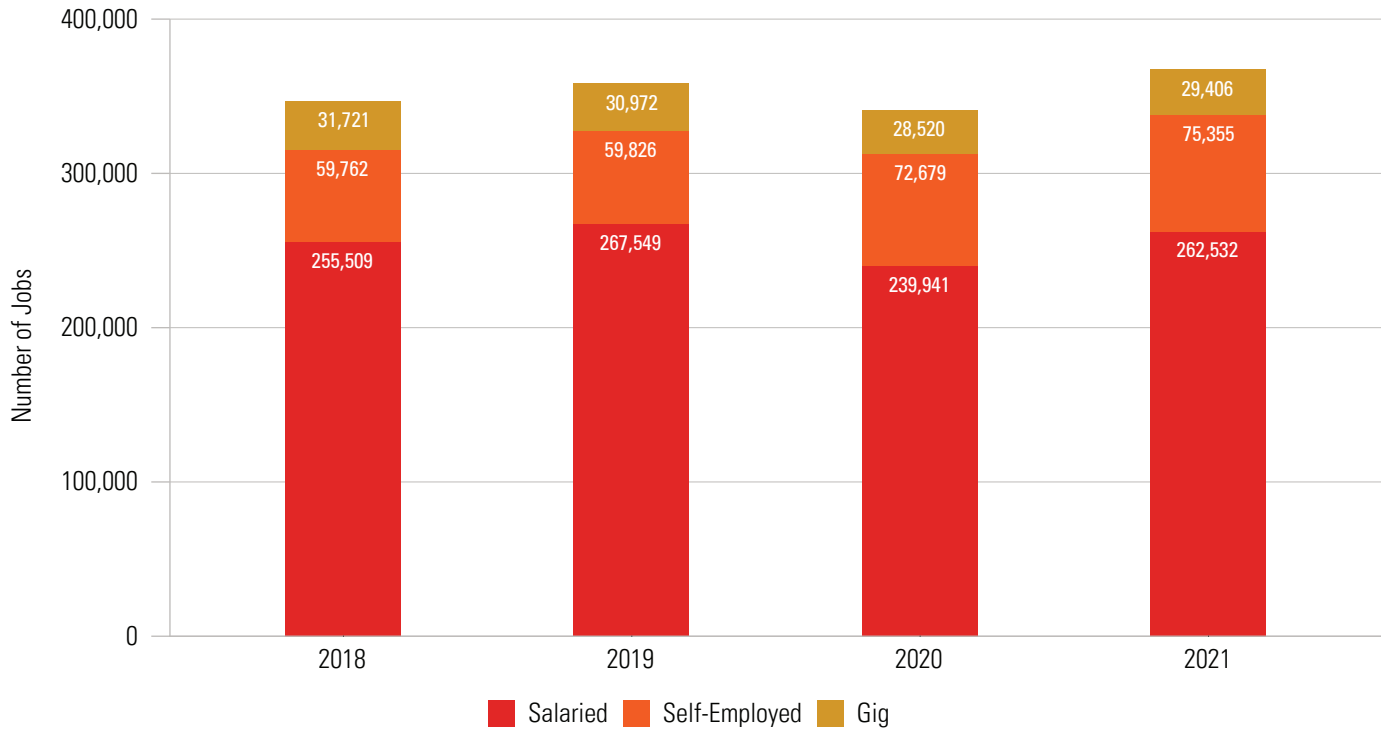
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

FIGURE 2.7: ENTERTAINMENT EMPLOYMENT BY WORKER TYPE
2018 to 2021

(A) CALIFORNIA



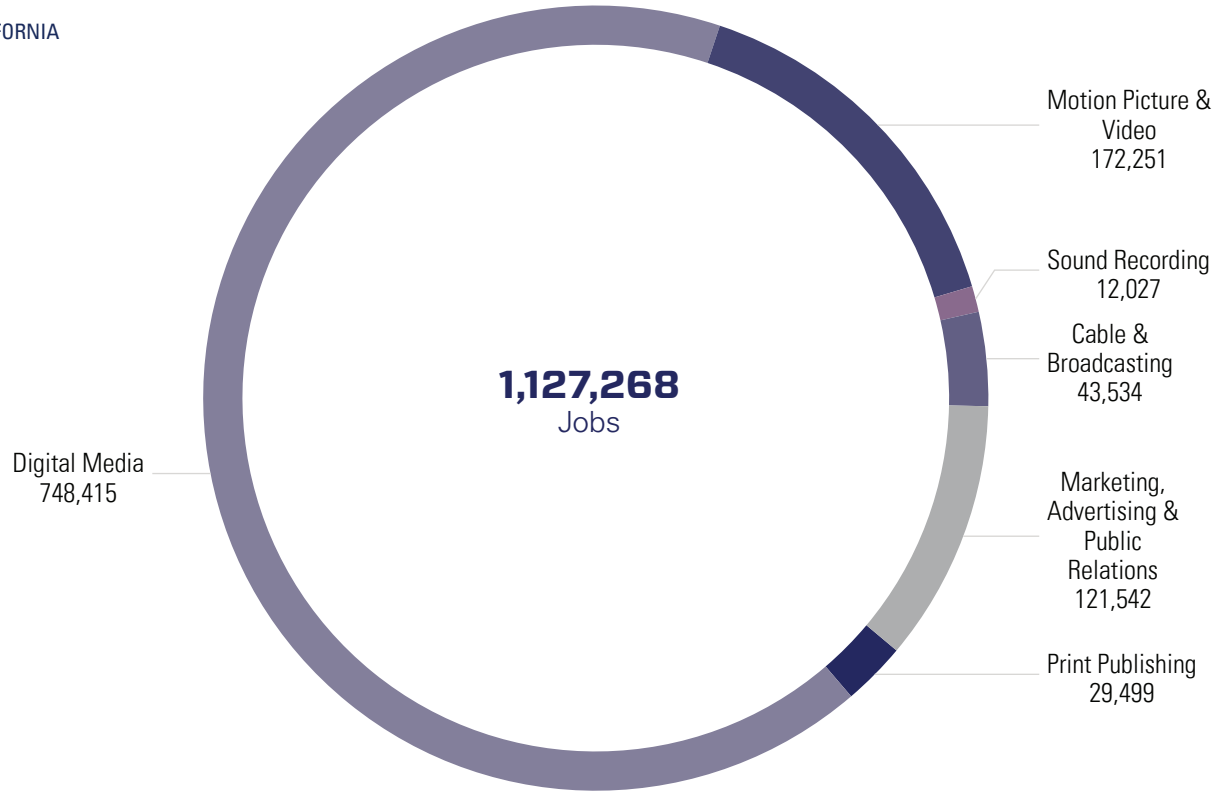
(B) LOS ANGELES COUNTY



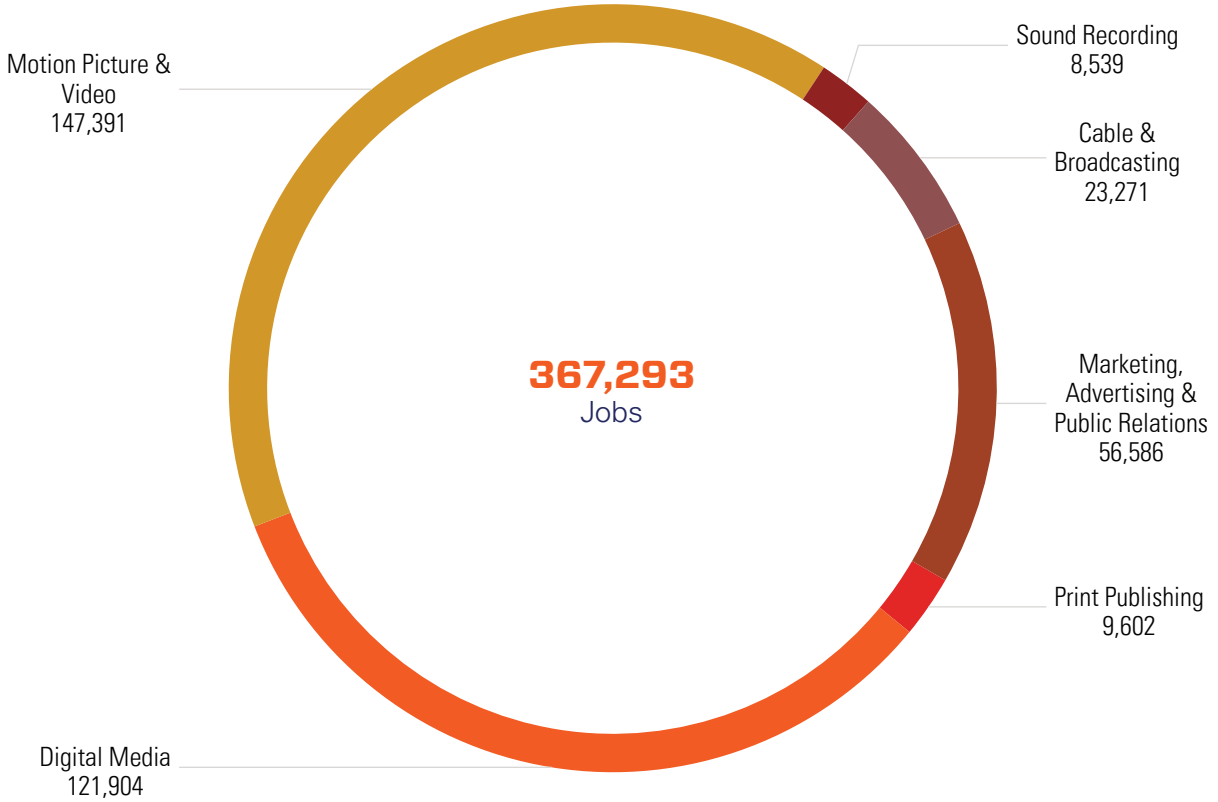
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

FIGURE 2.8: ENTERTAINMENT EMPLOYMENT SHARE BY SUBSECTOR IN CALIFORNIA AND LOS ANGELES
2021

(A) CALIFORNIA



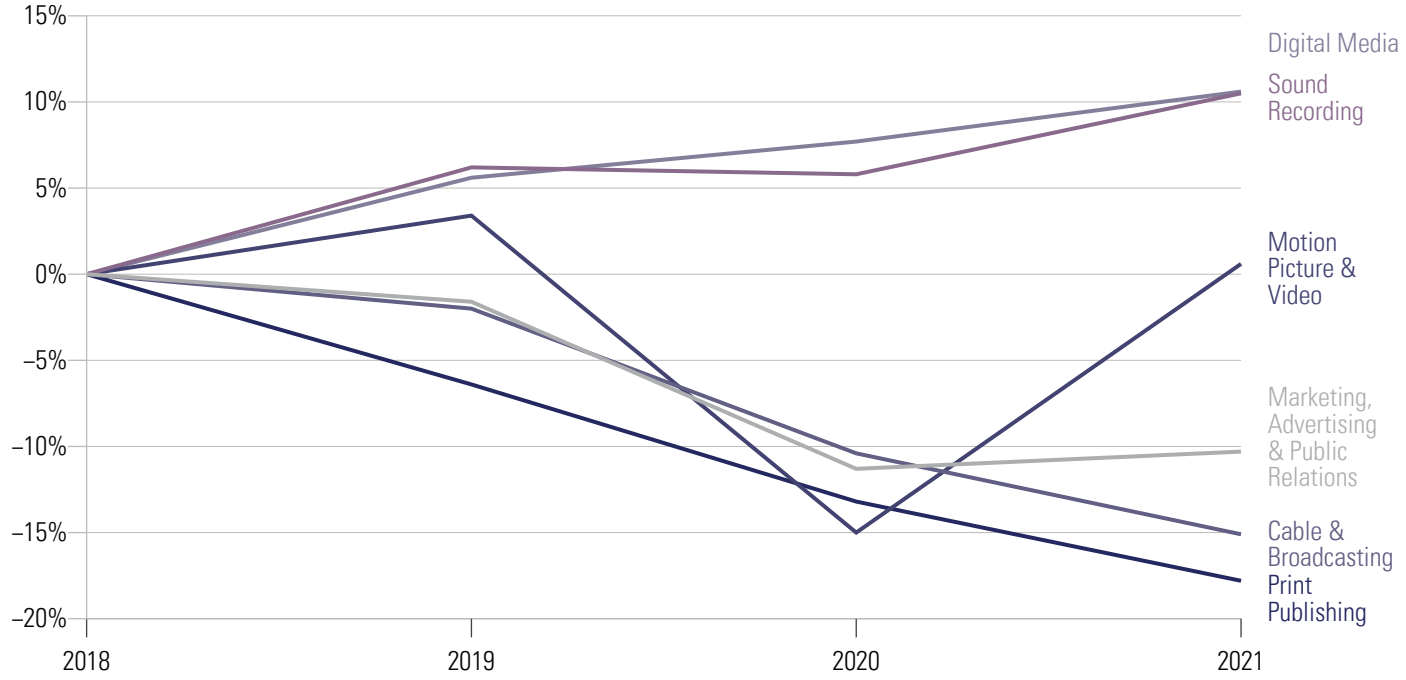
(B) LOS ANGELES COUNTY



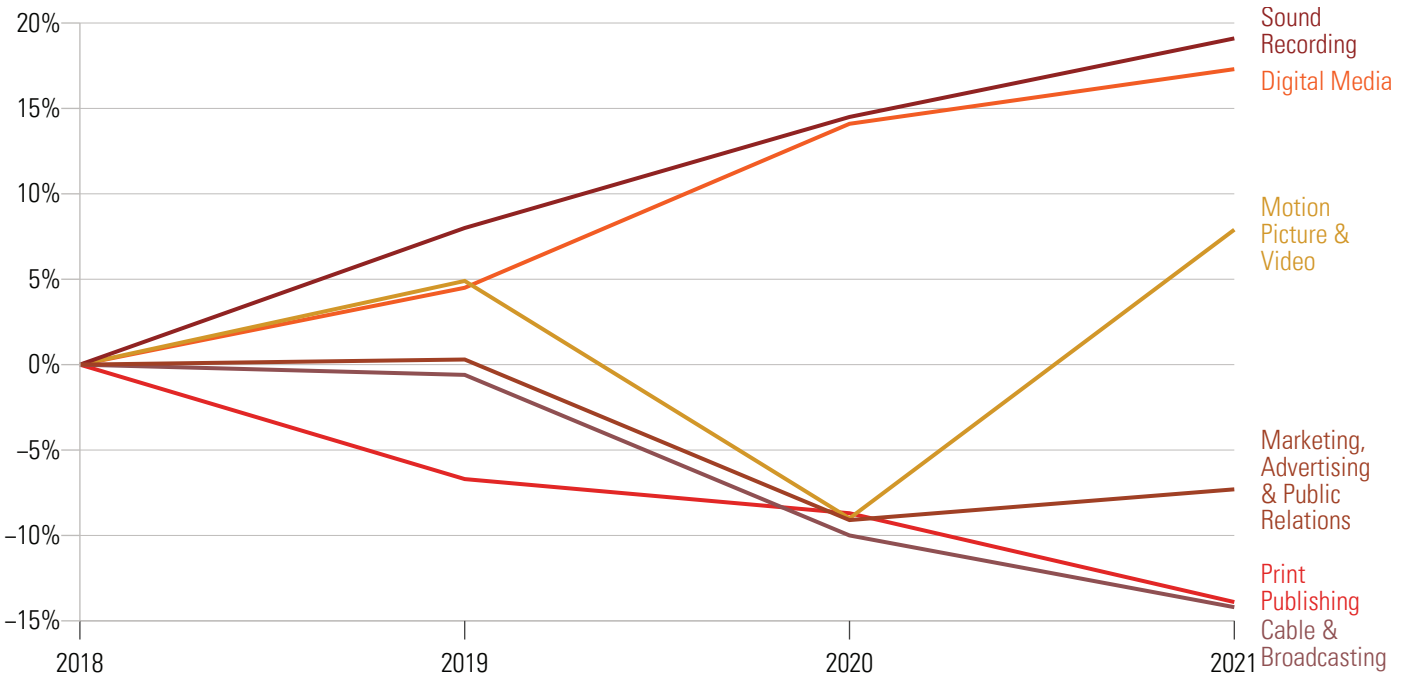
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

FIGURE 2.9: ENTERTAINMENT EMPLOYMENT GROWTH BY SUBSECTOR IN CALIFORNIA AND LOS ANGELES
2018 to 2021

(A) CALIFORNIA



(B) LOS ANGELES COUNTY



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

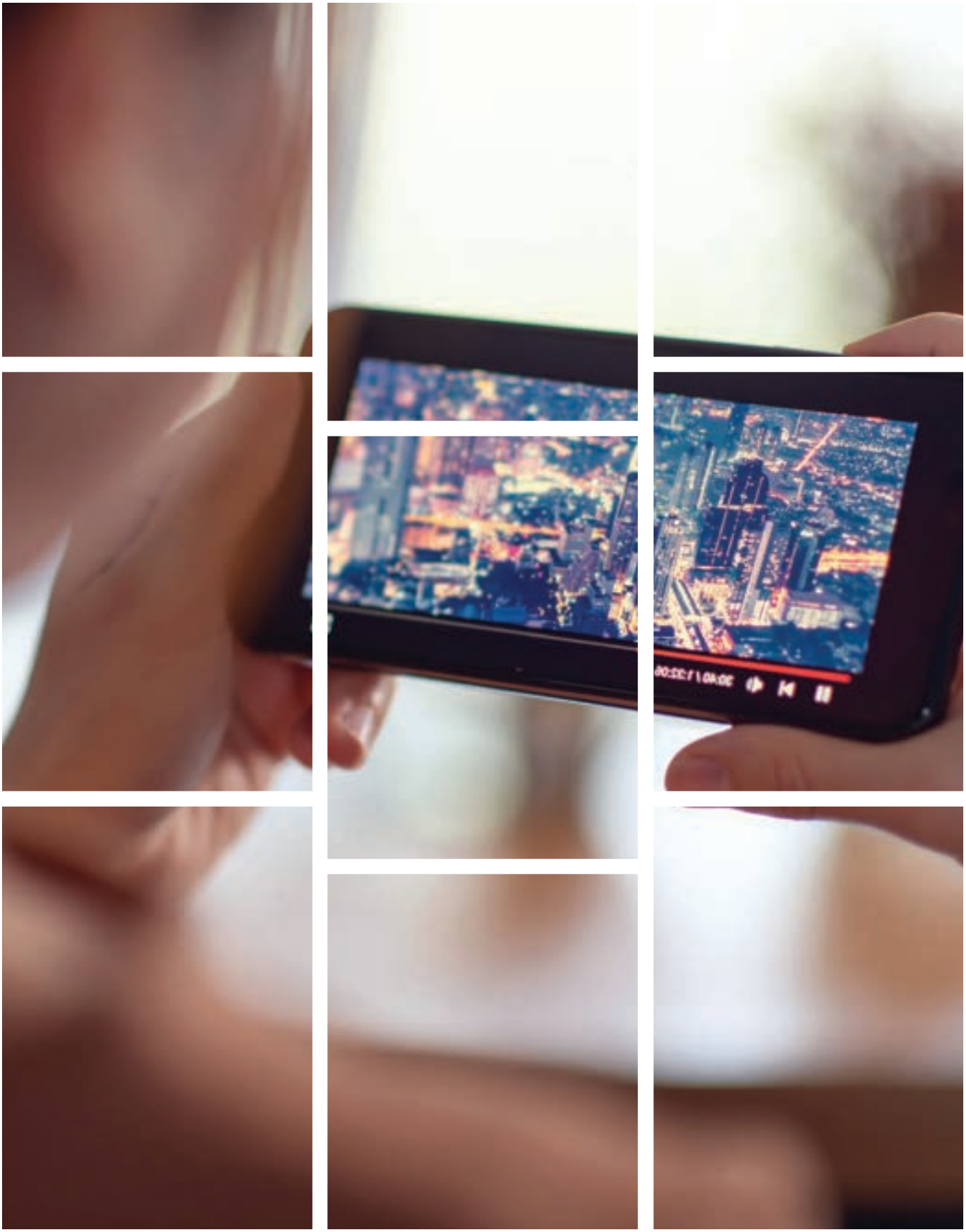
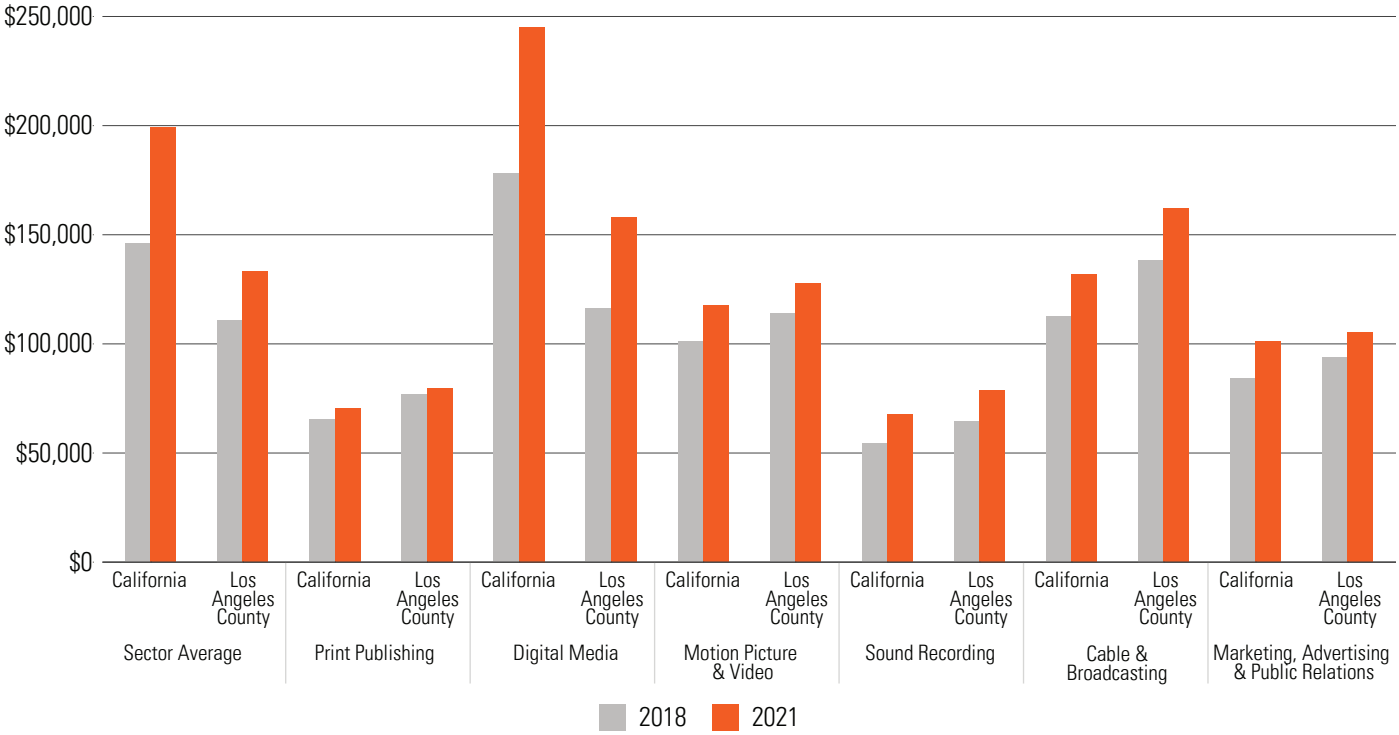
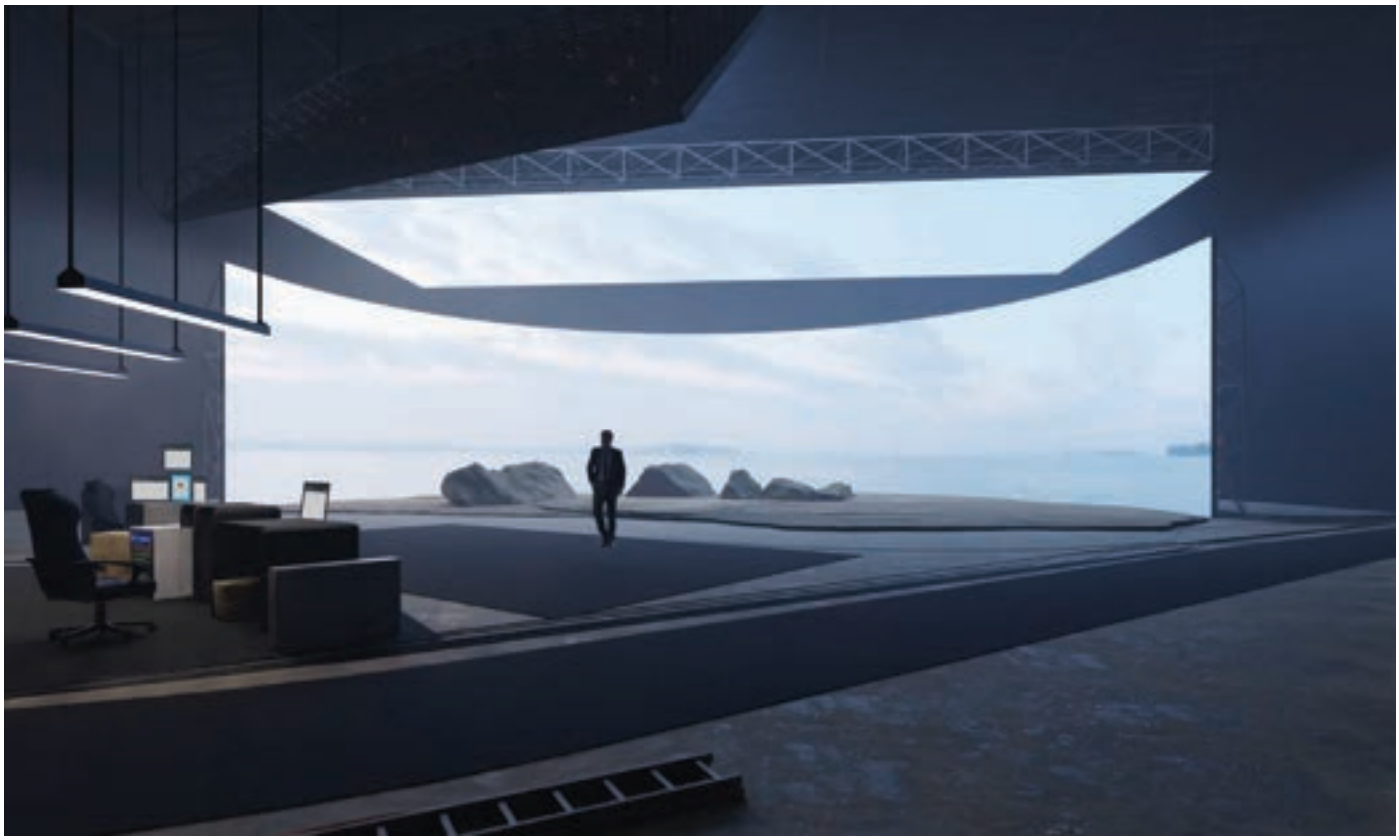


FIGURE 2.10: AVERAGE ANNUAL WAGES FOR ENTERTAINMENT BY SUBSECTOR IN CALIFORNIA AND LOS ANGELES COUNTY
2018 to 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey



TECHNOLOGY SPOTLIGHT: ENTERTAINMENT

Virtual Production in Film and Television

Virtual Production (VP) is a rapidly expanding method of content creation. Combining computer-generated imagery (CGI), game engines, and extended reality technologies, VP enables film and television production teams to conduct virtual scouting, design virtual sets, and deploy real-time, on-set visual effects. Such expanded capabilities are impacting many film and television disciplines and departments including, but in no way limited to, cinematography, production design, visual effects, and animation.

Virtual production teams around the world are using game engines like Unreal Engine and Unity to create the digital sets, props, and environments to replace legacy green screen technology. These game engines provide a wide range of tools and features that can be used to create high-quality 3D environments that boast sophisticated physics modeling and special effects. The use of LED volumes to create realistic and dynamic lighting environments for the actors on set, for example, creates a more seamless and realistic look in the final film or television show.

TABLE 2.3: GLOBAL VIRTUAL PRODUCTION STAGE ACTIVITY

(A) COUNTRY

	TOTAL	TIER 1	TIER 2	TIER 3
US	84	9	11	64
UK	40	12	6	22
Japan	16	1	3	12
Germany	14	2	4	8
Australia	11	1	4	8
Canada	10	3	2	5
South Korea	10	0	1	9
All Others	71	20	7	44
Total	**256**	**48**	**38**	**172**

(B) CITY

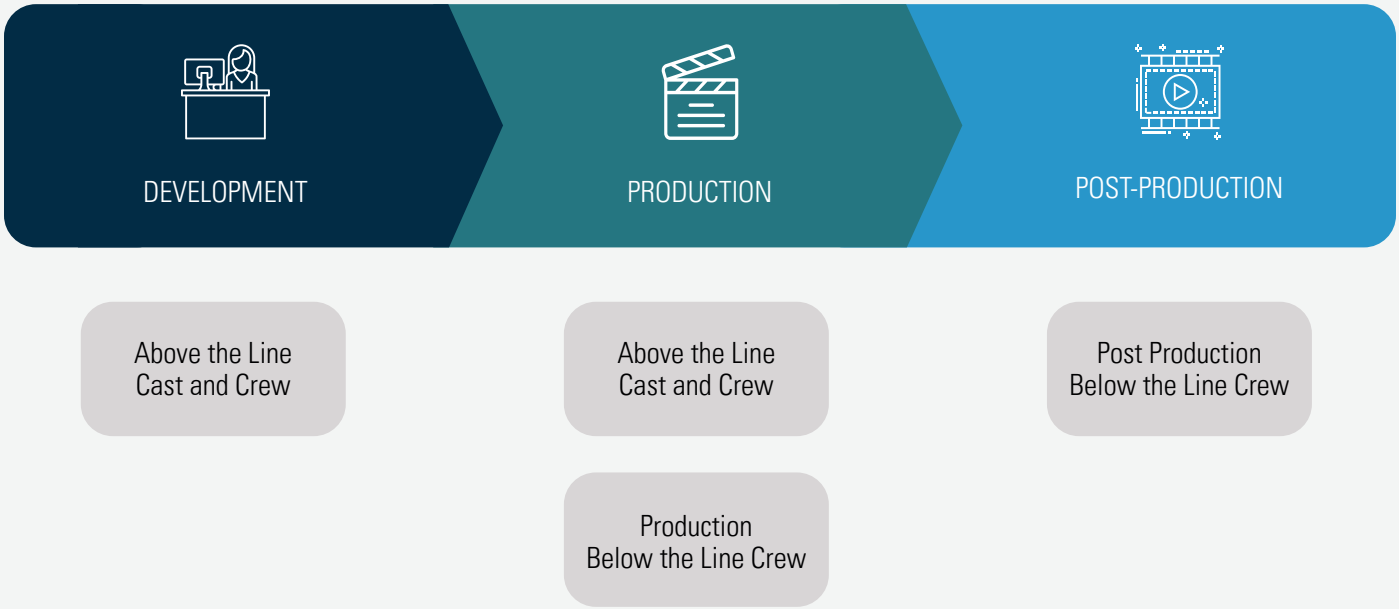
	TOTAL	TIER 1	TIER 2	TIER 3
London	27	10	5	12
Los Angeles	21	4	4	13
Tokyo	16	1	3	12
Atlanta	12	0	1	11
Vancouver	5	2	0	3

Note: The stage tier distinction revolves around time syncing and setup capabilities. Each level supports different segments of industries engaging with virtual production. Technical complexity increases as the tiers increase: Tier 1 for smaller independent productions, Tier 2 considered standard greenscreen, and Tier 3 includes a fully synced LED volume.

Source: Rock Paper Reality

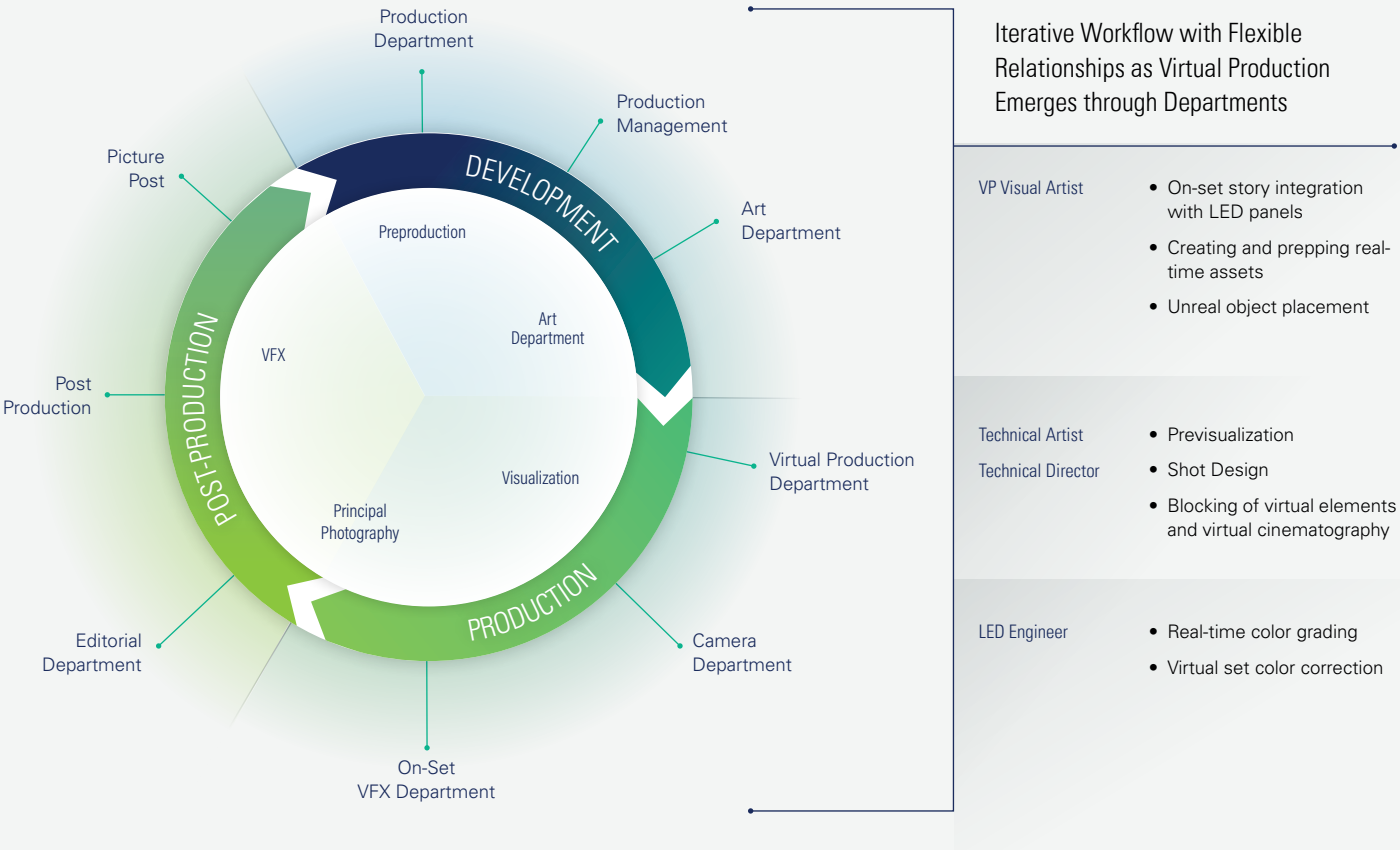
The ability of VP teams to incorporate visual effects (VFX) throughout the entire production life cycle renders the concept of a linear and segmented filmmaking process obsolete. With in-camera visual effects, VFX crews are becoming an integral part of the primary on-set filmmaking process. Similarly, VFX artists are now joining the ranks of cinematographers, production designers, and costume designers, who influence production from the very beginning. This dynamic reduces miscommunication and duplications of effort because creative decisions can be made iteratively throughout the production process.

FIGURE 2.11: TRADITIONAL PHASES OF FILMMAKING



Source: CVL Economics

FIGURE 2.12: ITERATIVE DEVELOPMENT, PRODUCTION, AND POST-PRODUCTION WORKFLOWS



Source: CVL Economics

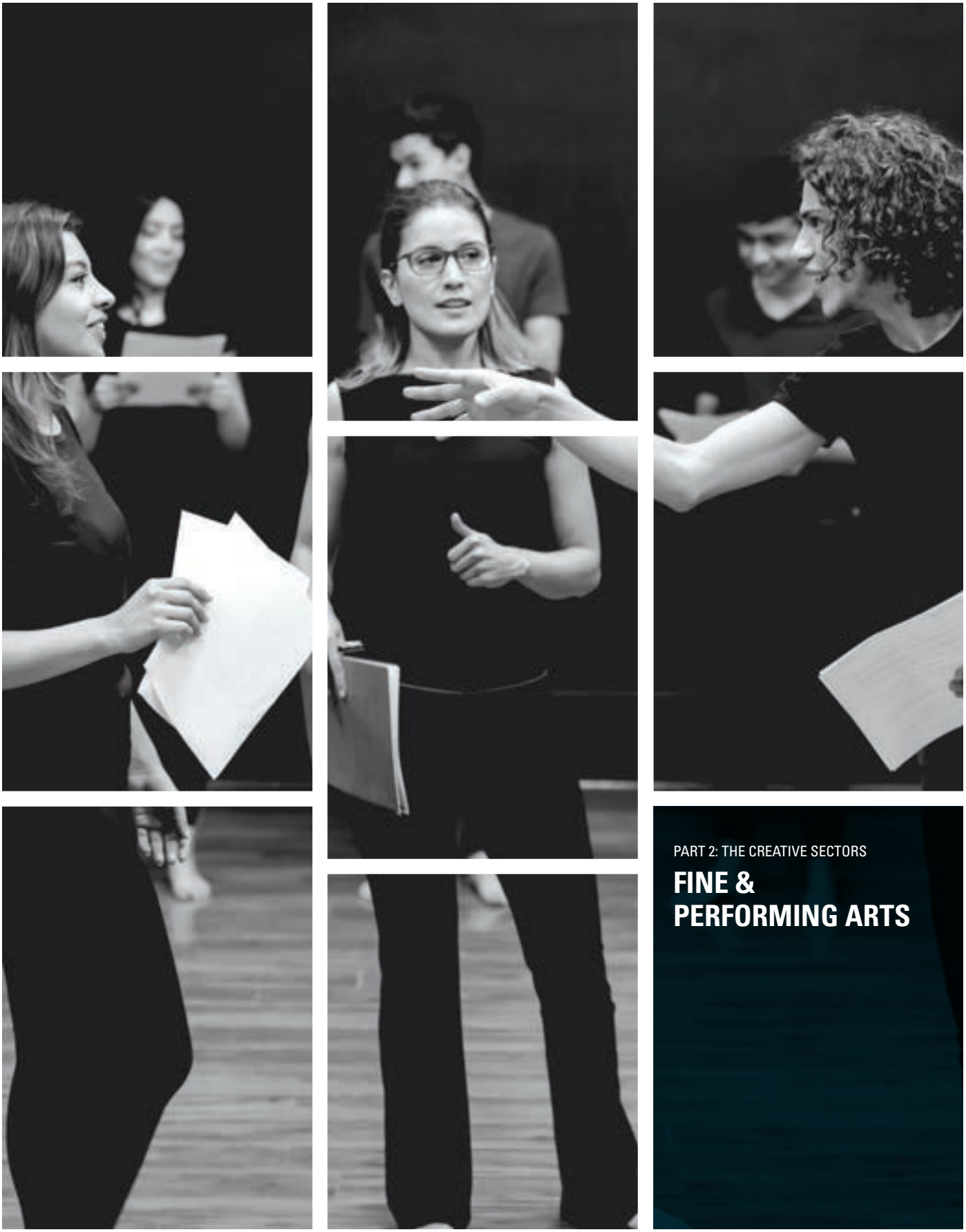
TECHNOLOGY SPOTLIGHT: ENTERTAINMENT

The Virtual Backlot

A film studio backlot typically includes a variety of large-scale sets used to simulate a range of locations and environments. Backlots have historically provided a controlled environment for filming, which allows studios to completely manage the production process and avoid common on-site disruptions that accompany location shoots.

Most major studios keep physical objects—some dating back nearly a century—from their previous work in storage. Disney has the living room from *Modern Family*. Warner Brothers houses the set from *Friends* and the *Harry Potter* film franchise. Universal has models of the Bates Motel and assorted props from *Psycho*. All of them have archives of costumes and objects and materials that helped build the worlds of their most famous projects.

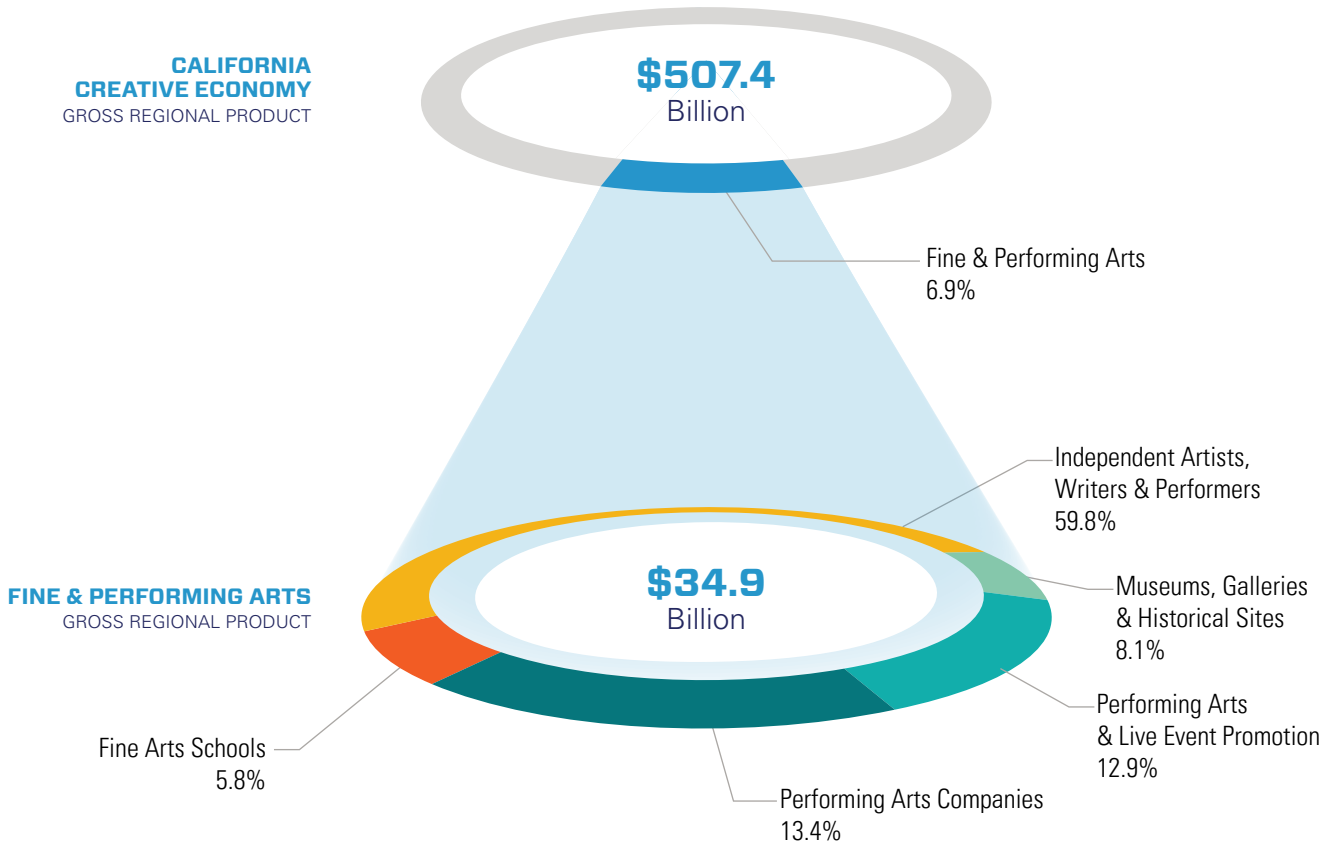
The intersection of virtual production and extended reality will one day make the need for backlots obsolete, as sets and props will transition from the physical world into the digital realm. Three dimensional digital objects, environments, buildings, faces, textures, and costumes will live in digital forms on servers, changing the way in which stories are told and interacted with. This creates not just the ability to make a sequel more easily, but in fact allows for an entire ecosystem of derivative work to emerge.



PART 2: THE CREATIVE SECTORS

FINE & PERFORMING ARTS

FIGURE 2.13: FINE & PERFORMING ARTS SHARE OF CALIFORNIA'S CREATIVE ECONOMY GROSS REGIONAL PRODUCT
2021



Note: Values reported in 2022 dollars.

Source: U.S. Bureau of Economic Analysis; IMPLAN

The Fine & Performing Arts sector is second only to Entertainment with respect to employment with nearly 315,000 jobs across California in 2021, over half of which are located in Los Angeles County. Including indirect and induced effects, the sector supported approximately 500,000 jobs statewide and contributed $35 billion to state GRP. Fine & Performing Arts also has the largest share of gig workers of any creative industry, with over 51% of workers engaged in gig work in 2021 in California. But this share has been on the decline. Since 2019, only the number of self-employed workers has increased (+10,600 versus -14,050 salaried and -59,400 gig workers) as the pandemic temporarily—or in some cases permanently—shutdown live performance venues and, consequently, work opportunities for full-time professional artists and those working on a gig basis.

As noted in last year's Report, Fine & Performing Arts was also the hardest hit creative sector by the pandemic. Shuttered concert venues, exhibition spaces, and other cultural centers in 2020 resulted in the loss of 17% and 12% of sector jobs in California and Los Angeles County, respectively. In California, sector employment continued to decline in 2021 (-0.2% between 2020 and 2021). Los Angeles County saw minimal sector employment growth in 2021 (+0.8%), but employment in both regions remains well below pre-pandemic levels (-19% in California and -16% in Los Angeles County).

Subsector Analysis

The Fine & Performing Arts sector comprises mostly live performance activities, like concerts and theater. On the one hand, big events and festivals have bounced back and even increased beyond pre-pandemic levels. Live Nation's revenues, for instance, were up 63% in the third quarter of 2022 compared to three years earlier.[17] On the other hand, smaller venues like local theaters are facing a longer road to recovery.[18] Nationwide, average ticket sales for performing arts organizations hover around 75% of what they were before the pandemic, and many regional theaters are faring worse.[19] The pandemic has accelerated longer-term trends that have been challenging the sector for years, including but not limited to the declining number of ticket subscribers as well as people trading live theater for other forms of entertainment as rising costs of living strain personal budgets.[20] Furthermore, live theater attracts generally older audiences—a demographic that is more conscious about returning to crowds due to health concerns.

Overall, the Performing Arts Companies; Independent Artists, Writers & Performers; and Performing Arts & Live Event Promotion subsectors all saw steep declines in employment in 2020. Of these subsectors, Performing Arts & Live Event Promotion and Performing Arts Companies across the state have only marginally improved since then (+4.2% and +4.8% between 2020 and 2021, respectively), but remain well below pre-pandemic levels (-17.5% and-24.4%, respectively). Employment in the Independent Arts, Writers & Performers subsector continued to decline in 2021 (-2.4% in California and-1.5% in Los Angeles County) and is roughly 20% below pre-pandemic levels in both California and Los Angeles County.

The sector has also been challenged with staffing shortages across the board.[21] From Performing Arts & Live Event Promotion companies to Museums, Galleries & Historical sites, many experienced significant job losses as venues closed during the pandemic but have yet to regain workers even though establishments have reopened. In California, workers in Fine & Performing Arts earn the lowest wages out of all the creative sectors on average, earning about $45,000 annually in 2021. While sector employees earn more on average in Los Angeles County, wages grew the least compared to other creative sectors and the economy overall between 2018 and 2021.

[17] "Live Nation Entertainment Reports Third Quarter 2022 Results." Live Nation. Accessed January 10, 2023. Retrieved from: https://www.livenationentertainment.com/2022/11/live-nation-entertainment-reports-third-quarter-2022-results/.

[18] Huston, Caitlin. "Live Concerts Are Back, But Small Venues Face Longer Road to Recovery." The Hollywood Reporter. June 2, 2022. Retrieved from: https://www.hollywoodreporter.com/business/business-news/live-concerts-small-venues-recovery-1235156481/.

[19] Mangi, Jordan. "Regional theaters struggle to recover from COVID closures." Marketplace. October 31, 2022. Retrieved from: https://www.marketplace.org/2022/10/31/regional-theaters-struggle-to-recover-from-covid-closures/.

[20] Paulson, Michael and Javier C. Hernandez. "Live Performance is Back. But Audiences Have Been Slow to Return." The New York Times. August 21, 2022. Retrieved from: https://www.nytimes.com/2022/08/21/arts/performing-arts-pandemic-attendance.html.

[21] Saville, Alice. "Theatre's hiring crisis." Exeunt Magazine. November 5, 2021. Retrieved from: https://exeuntmagazine.com/features/theatres-hiring-crisis/.

FIGURE 2.14: TOTAL ECONOMIC IMPACT OF THE FINE & PERFORMING ARTS SECTOR 2021

(A) CALIFORNIA

486,000

JOBS

$29B

LABOR INCOME

$55B

DIRECT GROSS VALUE ADDED

$9B

TAX REVENUE

(B) LOS ANGELES COUNTY

249,500

JOBS

$17B

LABOR INCOME

$34B

DIRECT GROSS VALUE ADDED

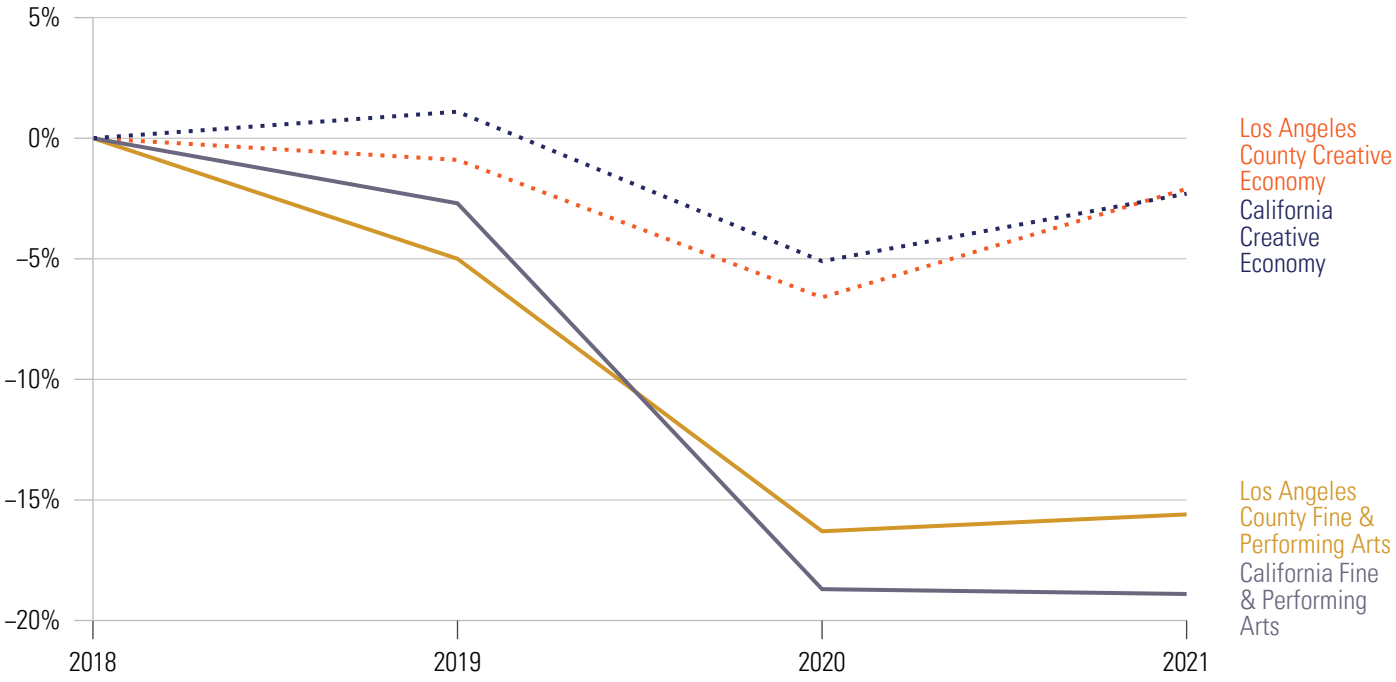
$4.7B

TAX REVENUE

Note: Values reported in 2022 dollars. Total economic impact comprises direct, indirect, and induced impacts. See Appendix for detailed results.

Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

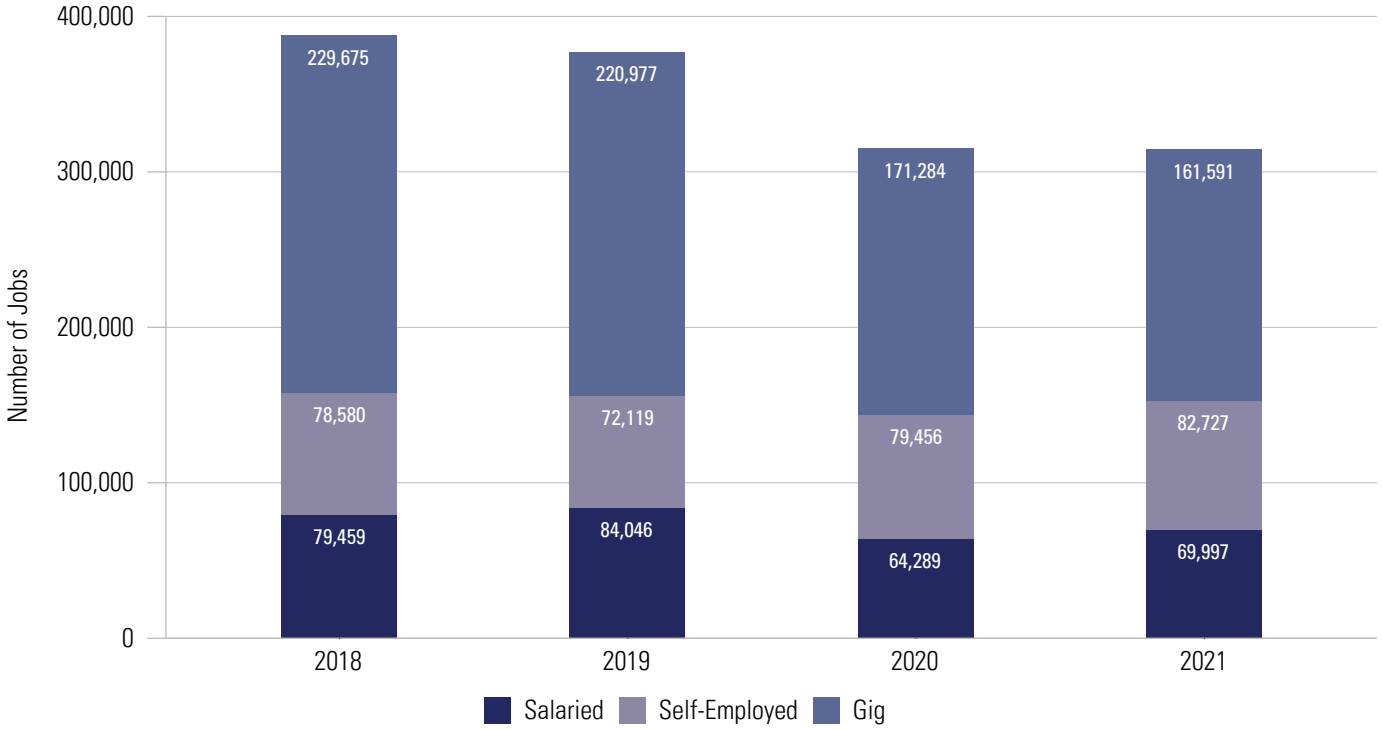
FIGURE 2.15: FINE & PERFORMING ARTS EMPLOYMENT GROWTH IN CALIFORNIA AND LOS ANGELES COUNTY
2018 to 2021



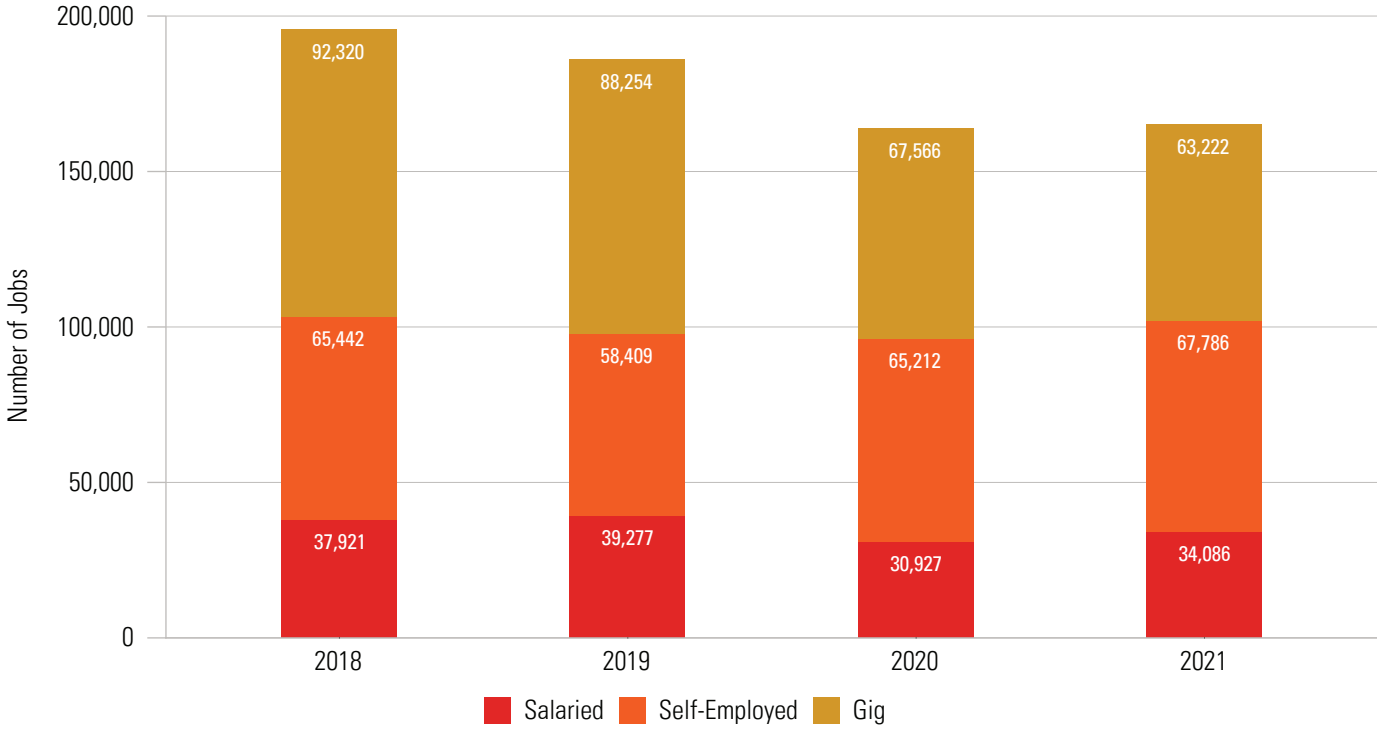
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community

FIGURE 2.16: FINE & PERFORMING ARTS EMPLOYMENT BY WORKER TYPE
2018 to 2021

(A) CALIFORNIA



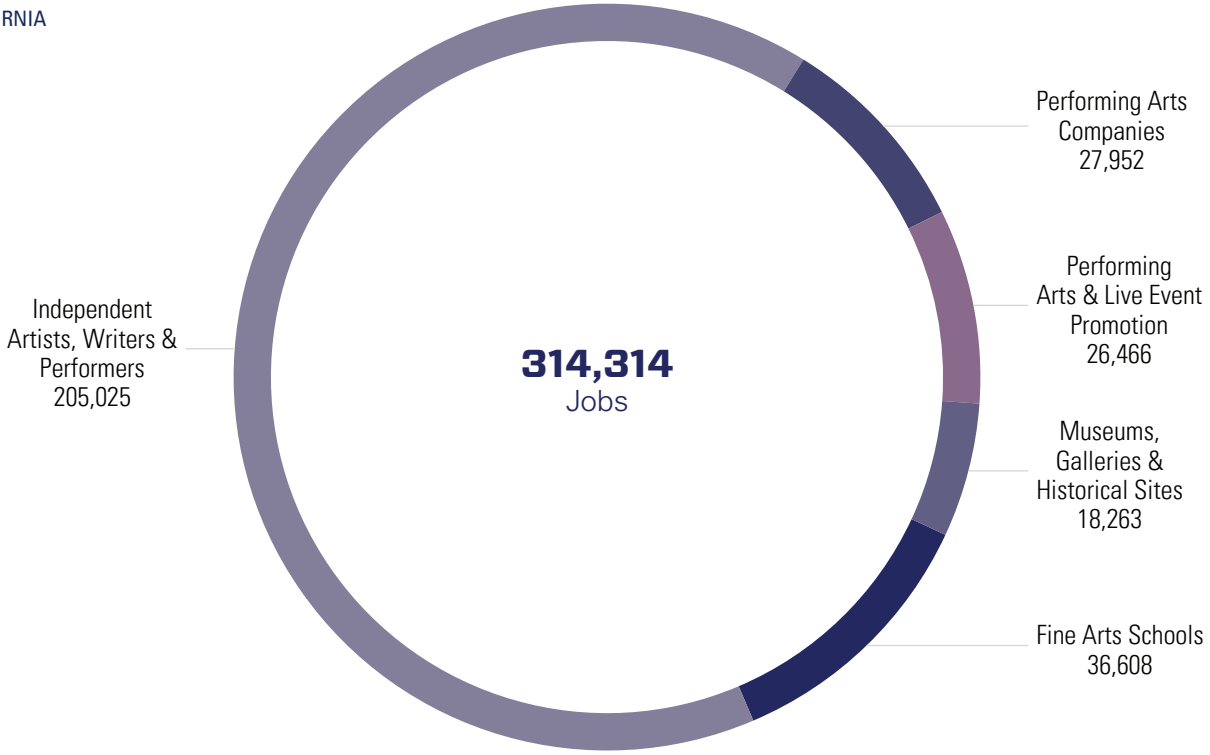
(B) LOS ANGELES COUNTY



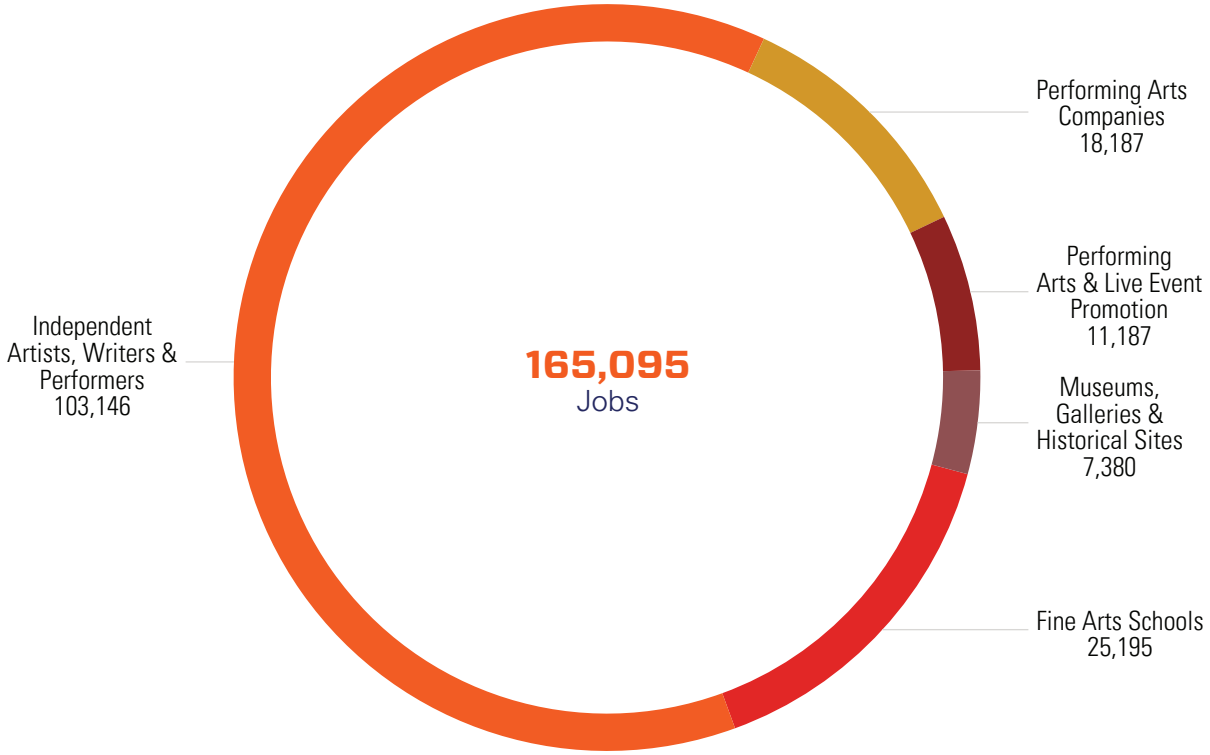
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

FIGURE 2.17: FINE & PERFORMING ARTS EMPLOYMENT SHARE BY SUBSECTOR IN CALIFORNIA AND LOS ANGELES 2021

(A) CALIFORNIA



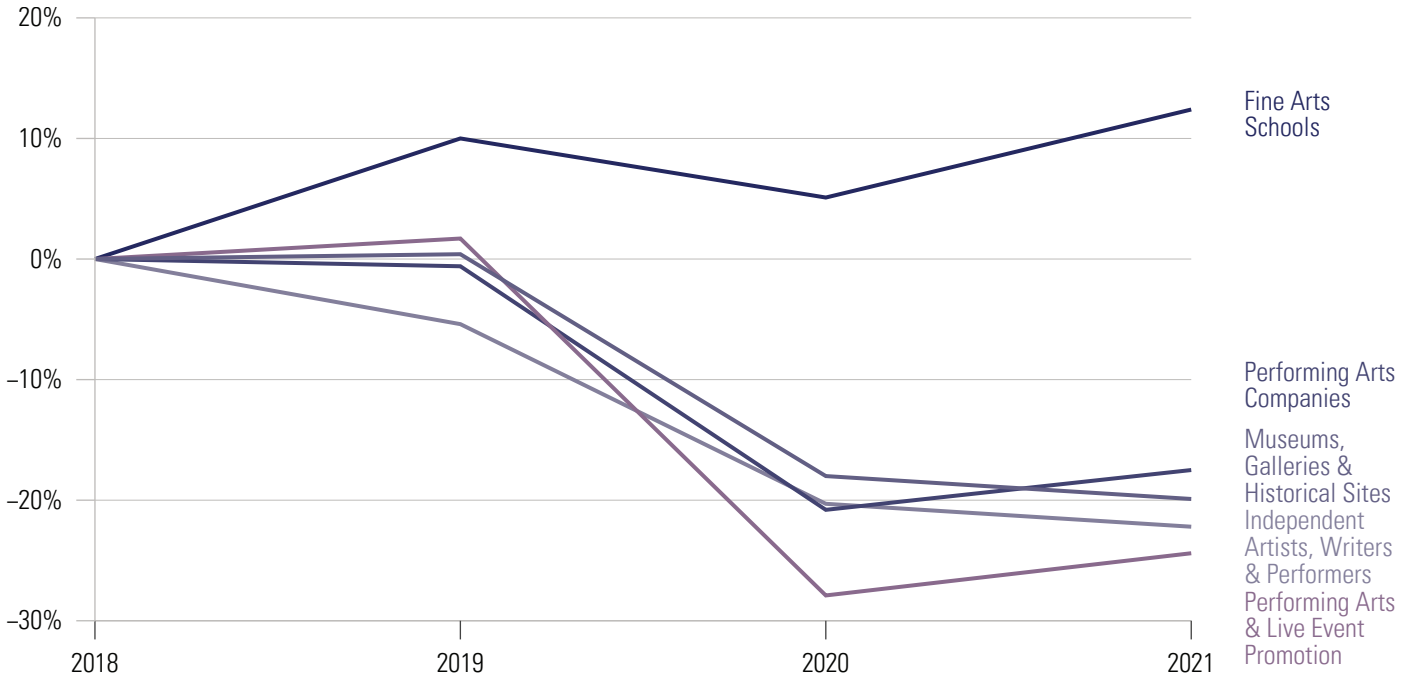
(B) LOS ANGELES COUNTY



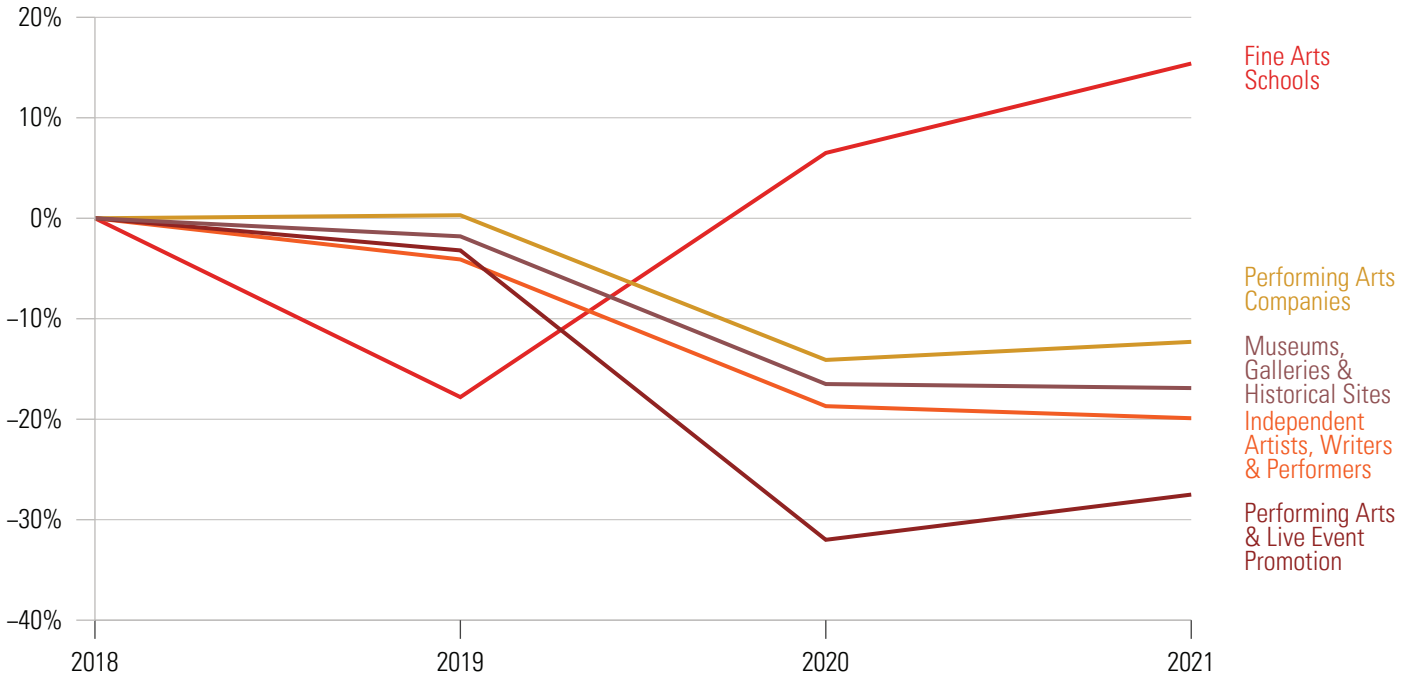
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

FIGURE 2.18: FINE & PERFORMING ARTS EMPLOYMENT GROWTH BY SUBSECTOR IN CALIFORNIA AND LOS ANGELES
2018 to 2021

(A) CALIFORNIA

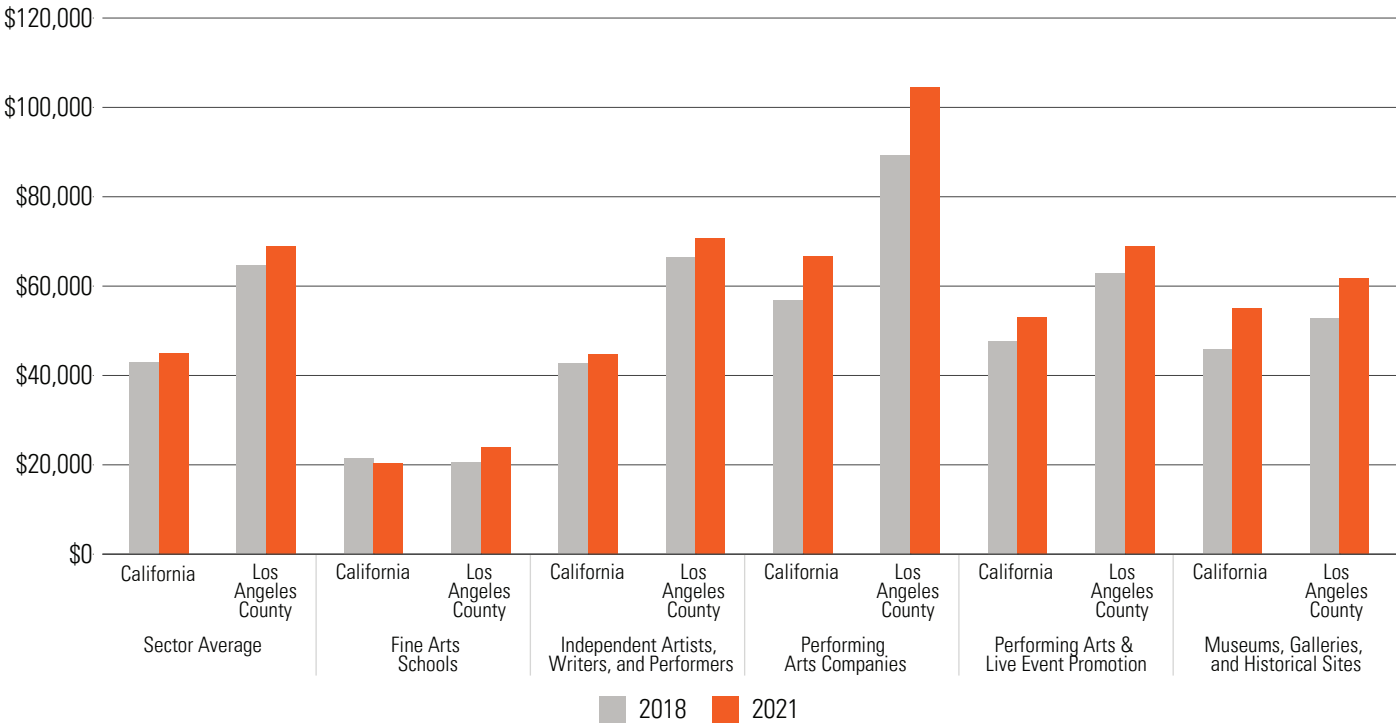


(B) LOS ANGELES COUNTY



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

FIGURE 2.19: AVERAGE ANNUAL WAGES FOR FINE & PERFORMING ARTS BY SUBSECTOR
2018 to 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

TECHNOLOGY SPOTLIGHT: FINE & PERFORMING ARTS

Ride of the Virtual Valkyries

In 1938 Italian director Armando Agnini presented Richard Wagner's opera *Die Walküre* at the Hollywood Bowl in Los Angeles. At one point, Valkyries on horseback holding torches descended hillside behind the Hollywood Bowl's hatch shell. The technical team at the time spotlighted the riders in such a way that the audience perceived their horses to be galloping in the sky. For good reason, this production of the opera "remains one of the most spectacular Bowl events of all time," according to Julia Ward, director of humanities for the Los Angeles Philharmonic.[22]

In 2022, the theater director Yuval Sharon staged his own interpretation of this climactic scene at the Hollywood Bowl. As the founder of the experimental, Los Angeles–based opera company The Industry, Sharon is known for producing opera performances in moving vehicles, Hollywood sound stages, and various "non-places" such as warehouses, parking lots, and escalator corridors.

His vision for Wagner at the famed Los Angeles amphitheater was no less imaginative. Behind the orchestra was a green backdrop and small platform for the opera's performers. However, on the Bowl's massive video screens a new and different world took shape. Sharon described the production's aesthetics as "a kind of retro-futurist aesthetic that involves vaporwave technology. … kind of in the world of *Tron* or *Blade Runner* and the early advent of video games that points in a futuristic direction but also looks back in the past."[23]

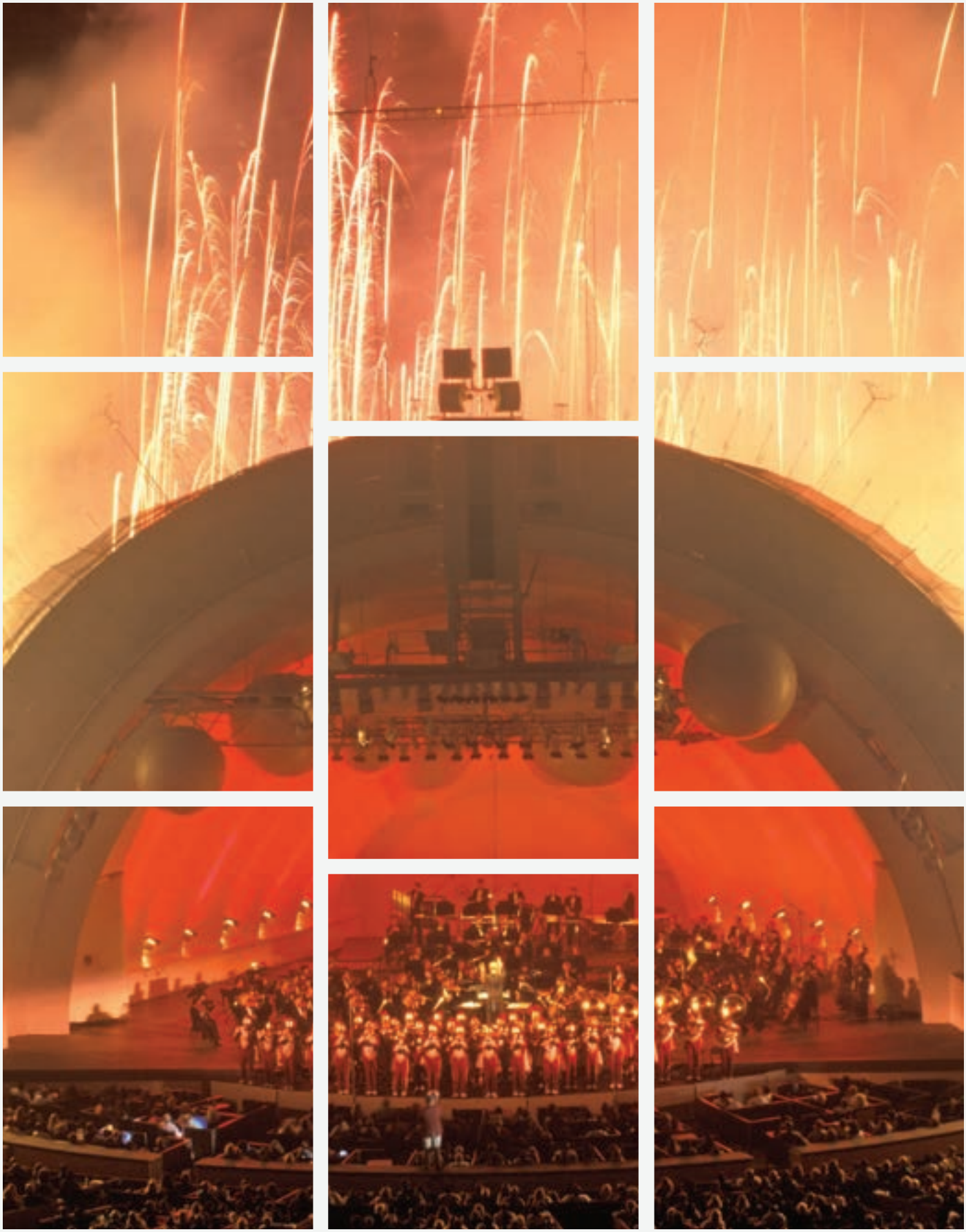
What the audience may not have known or fully appreciated was the 17-member team of designers and technical artists behind the visual effects that was larger than the cast.[24] This team crafted an interactive digital set with 3D graphics rendered in real-time and powered by Unreal Engine 4. Marrying the technology behind video game blockbusters like Fortnite with virtual production tools used in big-budget television series like *The Mandalorian*,[25] Wagner's *Die Walküre*, an opera first performed over 150 years ago, was brought to life in a way that the composer himself could never have imagined.

[22] Swed, Mark. "Review: With Yuval Sharon and Gustavo Dudamel at the Helm, 'Valkyries' Makes History Again at the Bowl." Los Angeles Times. July 18, 2022. Retrieved from: https://www.latimes.com/entertainment-arts/story/2022-07-18/review-wagners-valkyries-hollywood-bowl-dudamel-yuval-sharon.

[23] "Die Walküre Act III (c. 87 Minutes) (Richard Wagner)," Hollywood Bowl. Accessed January 21, 2023. Retrieved from: https://www.hollywoodbowl.com/musicdb/pieces/6344/die-walkure-act-iii-c-87-minutes.

[24] Swed. "Review: With Yuval Sharon and Gustavo Dudamel at the Helm, 'Valkyries' Makes History Again at the Bowl."

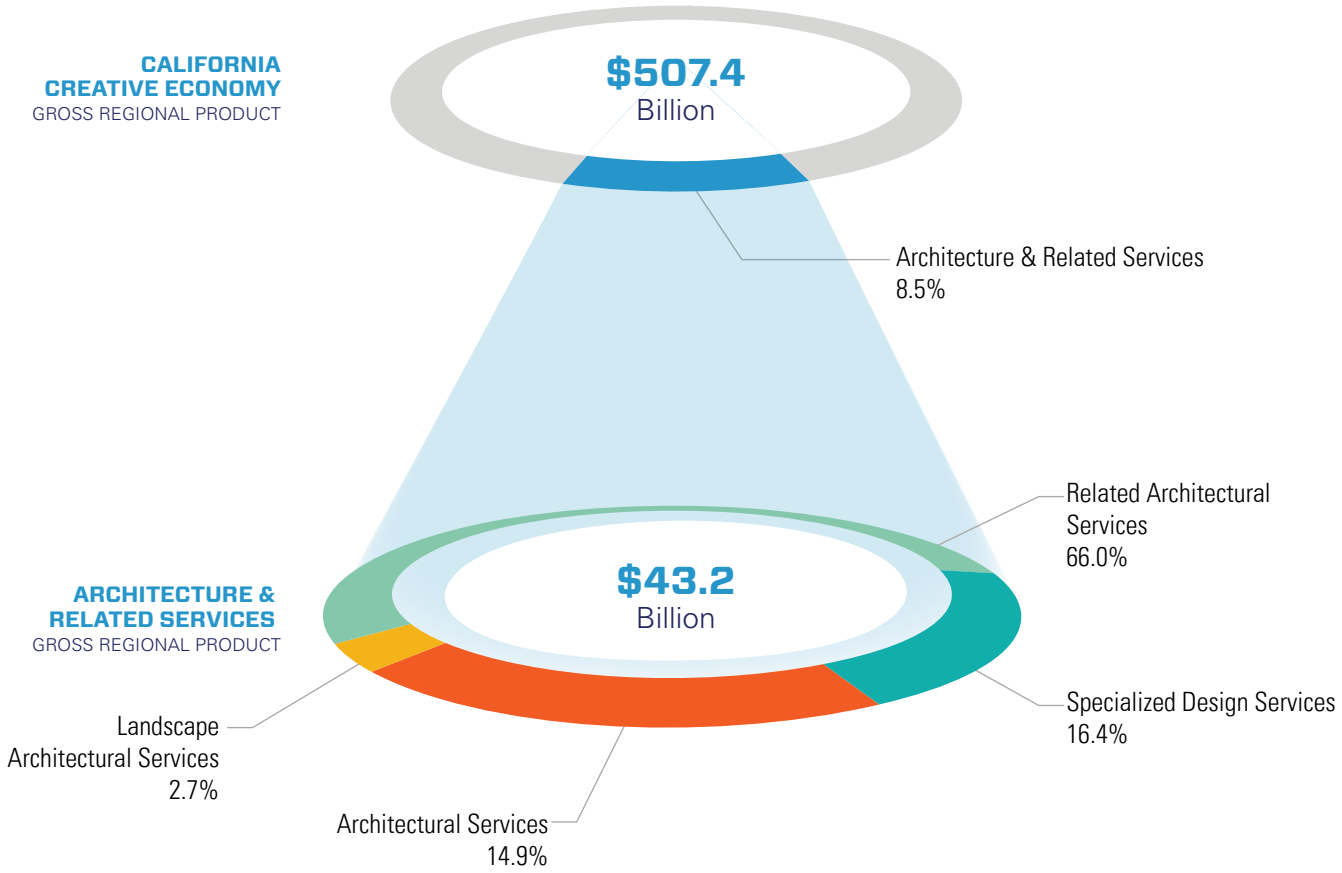
[25] Coldewey, Devin. "How 'The Mandalorian' and ILM Invisibly Reinvented Film and TV Production," TechCrunch (blog) February 20, 2020. Retrieved from: https://techcrunch.com/2020/02/20/how-the-mandalorian-and-ilm-invisibly-reinvented-film-and-tv-production/.



PART 2: THE CREATIVE SECTORS

ARCHITECTURE & RELATED SERVICES

FIGURE 2.20: ARCHITECTURE & RELATED SERVICES SHARE OF CALIFORNIA CREATIVE ECONOMY GROSS REGIONAL PRODUCT 2021



Note: Values reported in 2022 dollars.

Source: U.S. Bureau of Economic Analysis; IMPLAN

Architecture & Related Services performed relatively well throughout the pandemic, with a faster job growth than the creative economy overall. While sector employment in California contracted just 2% between 2019 and 2020 (the smallest employment decline than any other creative sector), employment grew by 10% in Los Angeles County over the same timeframe; indeed, whereas sector employment was adversely affected by the pandemic statewide, the Los Angeles County's Architecture & Related Services sector actually reversed a declining employment trajectory in 2020. This increase was largely driven by a rise in self-employment, which grew 28% between 2019 and 2020 and continues to grow; in 2021, over 53% of sector workers were self-employed (versus 18% across California). This rise in self-employment in Los Angeles County may explain the region's lower sector wages ($85,900 versus $94,800 in California), as well as the smaller increase in wage growth between 2018 and 2021 (+$6,700 versus +$10,000 in California).

Subsector Analysis

The Architecture & Related Services sector is experiencing its first signs of slowing down in two years nationally. Although hiring is still net positive, firms are booking less new work amid softening business conditions. But unlike California, where the four Architecture & Related Services subsectors each saw only modest changes in employment between 2018 and 2021, Los Angeles County had a more varied set of outcomes. Although the Landscape Architectural Services workforce, which was already shrinking prior to the pandemic, fell by nearly 10% over the same period, the Architectural Services and Related Services subsectors experienced substantial workforce gains (+21.4% and +12.5%, respectively). Much of this growth could be attributed to the City of Los Angeles's successful bid to host the 2028 Olympic games and the resulting mobilization of architects, urban designers, and civil engineers needed to build new infrastructure across the County.[27]

Specialized Design Services, which has nearly two-thirds of its workforce concentrated in Los Angeles County, performed well in the wake of the pandemic both in the region (+4.7 between 2020 and 2021) and statewide (+3.8%). Fueled by growth in the Interior Design and Industrial Design industries, this subsector was uniquely suited to a population sheltering in place. Remote work transformed the way people used space in their homes as well as the kind of environment they wanted to live in.[28] For firms returning to the office, commercial and corporate workspaces are increasingly being looked at through a "strategic design" lens rather than a purely utilitarian one.[29]

Change is also permeating through the architecture workforce as well. A highly publicized controversy over embedded exploitation in the architecture professions at the Southern California Institute of Architecture (SCI-Arc) has shined a new light on the sector's labor practices.[30] As one professor at the Yale School of Architecture notes, "There's all this stuff that makes us succumb to the ideology that architecture is a calling, not a career."[31] Many current workers in the field tend to agree. With the movement towards unionization gaining traction in unexpected places like Amazon, Apple, and Starbucks, organized labor may be finding a foothold in the Architecture & Related Services sector as well. Although employees at Brooklyn-based SHoP Architects were unsuccessful in their two-year campaign to unionize, employees at nearby Bernheimer Architecture were able to form what is now the first official union at a private architecture firm.[32] To what extent this trend continues is unclear, but calls to reform the profession join a growing chorus of workers across all sectors seeking to change the way business is done.

[26] "ABI November 2022: Architecture firm billings decline further." American Institute of Architects. Retrieved from: https://www.aia.org/pages/6576981-abi-november-2022-architecture-firm-billing.

[27] Pacheco, Antonio. "Before the 2028 Olympics, L.A. embarks on its most transformative urban vision in a generation." The Architect's Newspaper. June 20, 2019. Retrieved from: https://www.archpaper.com/2019/06/2028-olympics-los-angeles/.

[28] Hermanson, Marissa. "How the Pandemic Changed Our Concept of Home and How We Use Our Spaces." The Washington Post. April 6, 2022. Retrieved from: https://www.washingtonpost.com/magazine/2022/04/06/pandemic-home-design/.

[29] Muñoz Beraza, Elvira. "Strategic Design Should Reflect a Post-Pandemic Workforce Culture." ArchDaily. March 31, 2021. Retrieved from: https://www.archdaily.com/958908/strategic-design-should-reflect-a-post-pandemic-workforce-culture.

[30] Schulman, Pansy. "SCI-Arc Faces a Reckoning Amid Allegations of Faculty Misconduct." Architectural Record. Architectural Record. April 7, 2022. Retrieved from: https://www.architecturalrecord.com/articles/15607-sci-arc-faces-a-reckoning-amid-allegations-of-faculty-misconduct.

[31] Scheiber, Noam. "Architects Are the Latest White-Collar Workers to Confront Bosses." New York Times. December 21, 2021. Retrieved from: https://www.nytimes.com/2021/12/21/business/architects-white-collar-union.html.

[32] Scheiber, Noam. "Architects at a New York Firm Form the Industry's Only Private-Sector Union." New York Times. September 1, 2022. Retrieved from: https://www.nytimes.com/2022/09/01/business/architects-union.html.

TABLE 2.21: TOTAL ECONOMIC IMPACT OF THE ARCHITECTURE & RELATED SERVICES SECTOR
2021

(A) CALIFORNIA

547,100

JOBS

$52B

LABOR INCOME

$77B

DIRECT GROSS VALUE ADDED

$16B

TAX REVENUE

(B) LOS ANGELES COUNTY

174,000

JOBS

$16B

LABOR INCOME

$25B

DIRECT GROSS VALUE ADDED

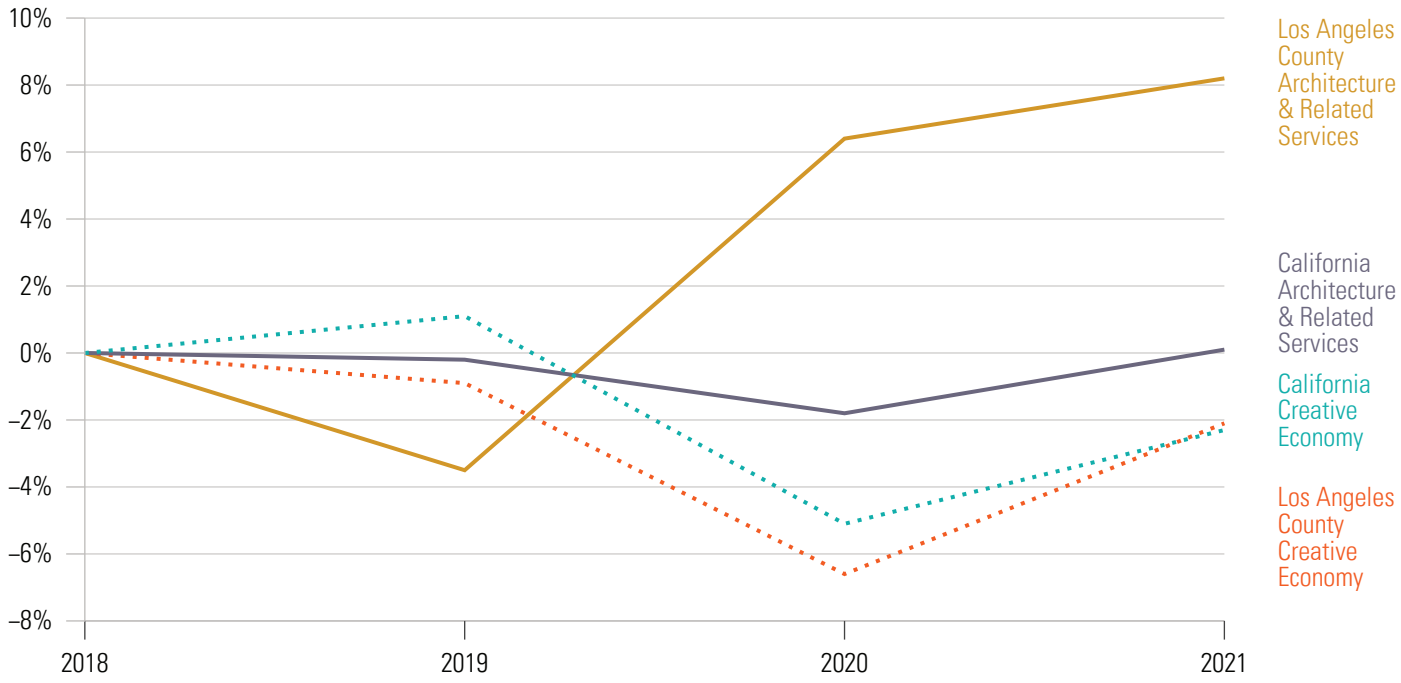
$5B

TAX REVENUE

Note: Values reported in 2022 dollars. Total economic impact comprises direct, indirect, and induced impacts. See Appendix for detailed results.

Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

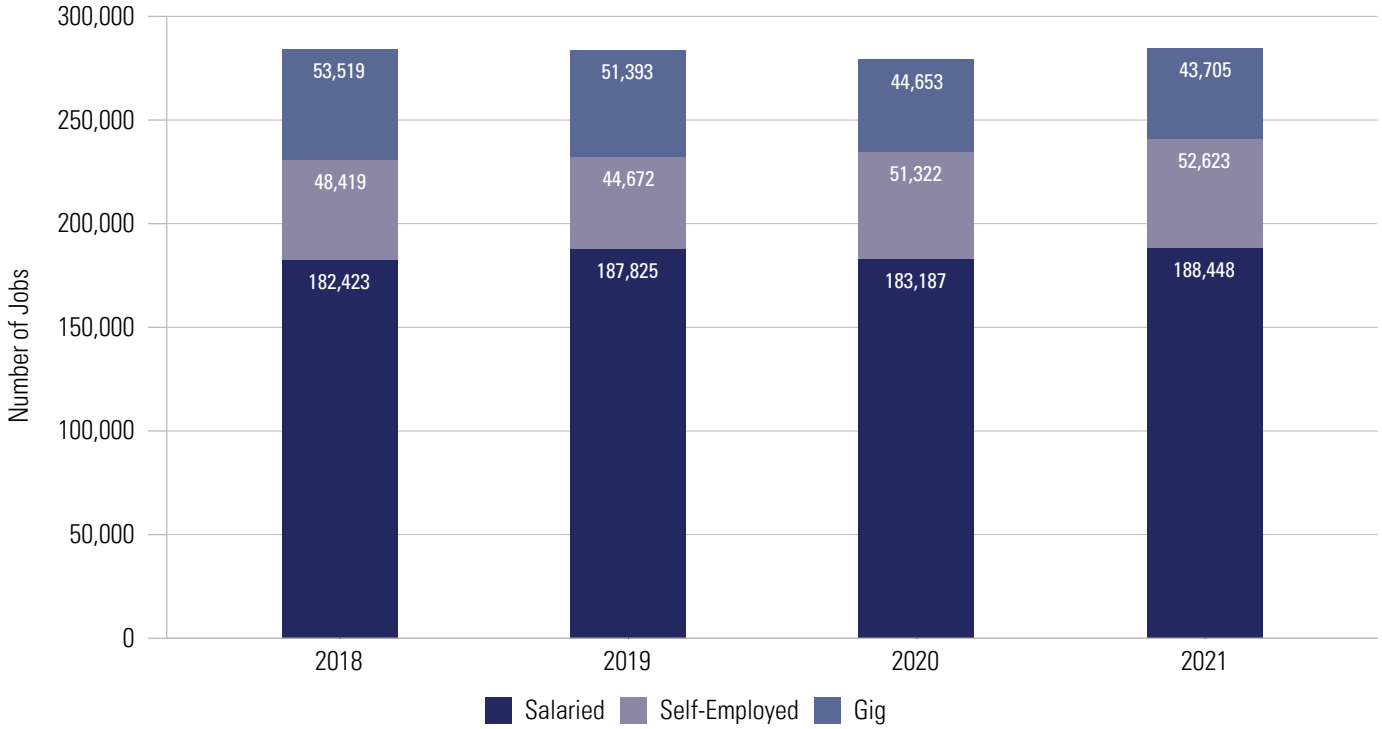
FIGURE 2.22: CHANGE IN ARCHITECTURE & RELATED SERVICES EMPLOYMENT IN CALIFORNIA AND LOS ANGELES COUNTY
2018 to 2021



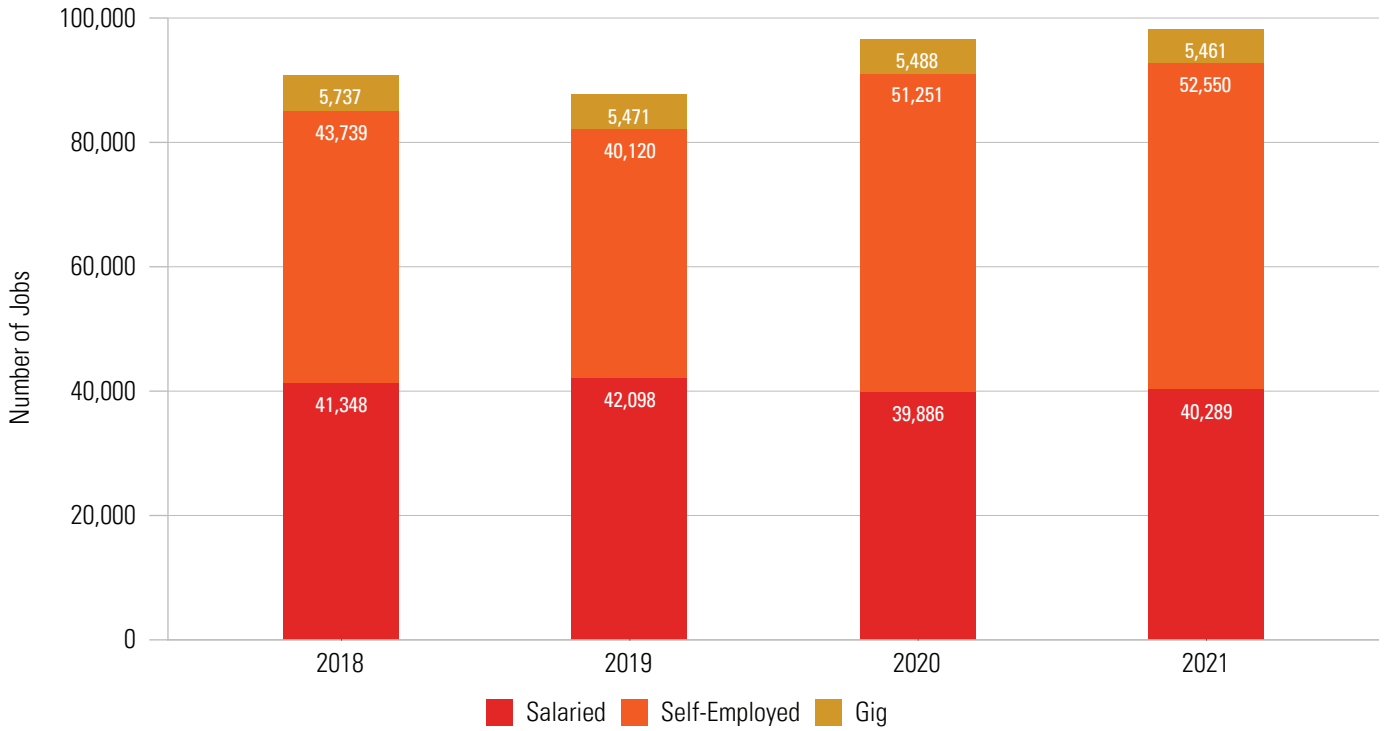
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community

FIGURE 2.23: ARCHITECTURE & RELATED SERVICES EMPLOYMENT BY WORKER TYPE
2018 to 2021

(A) CALIFORNIA



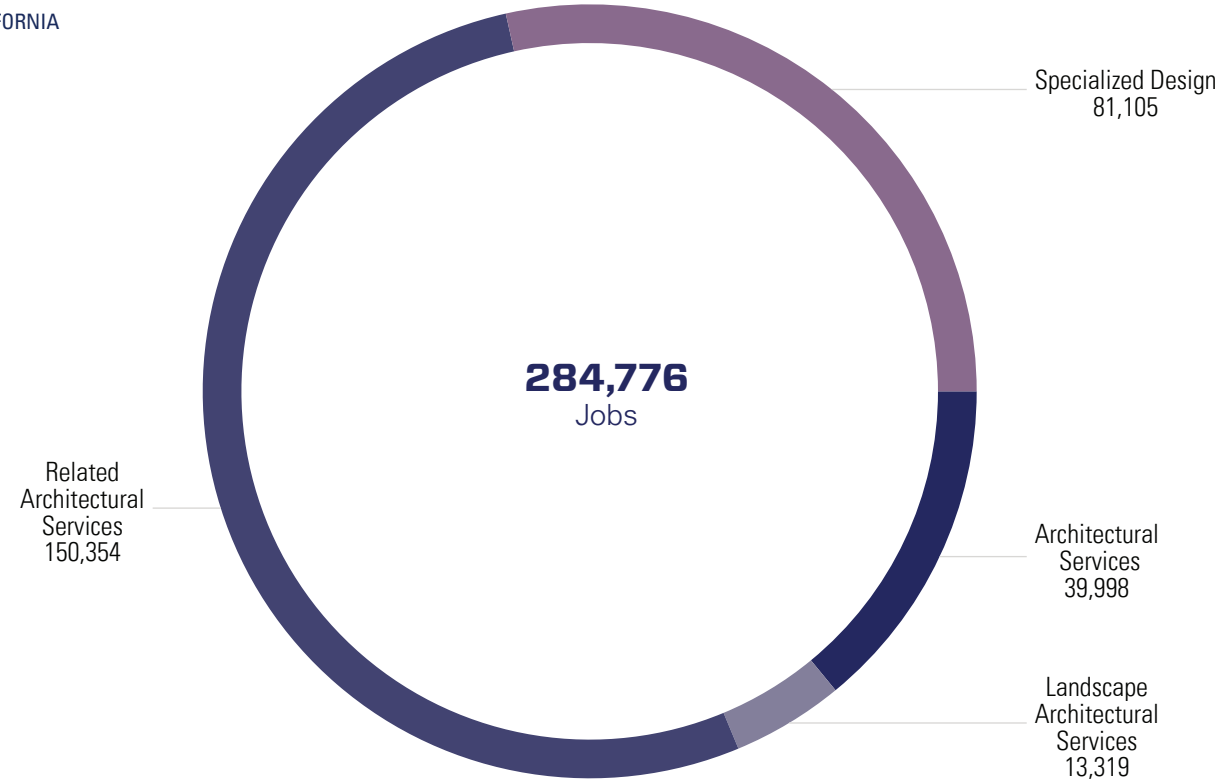
(B) LOS ANGELES COUNTY



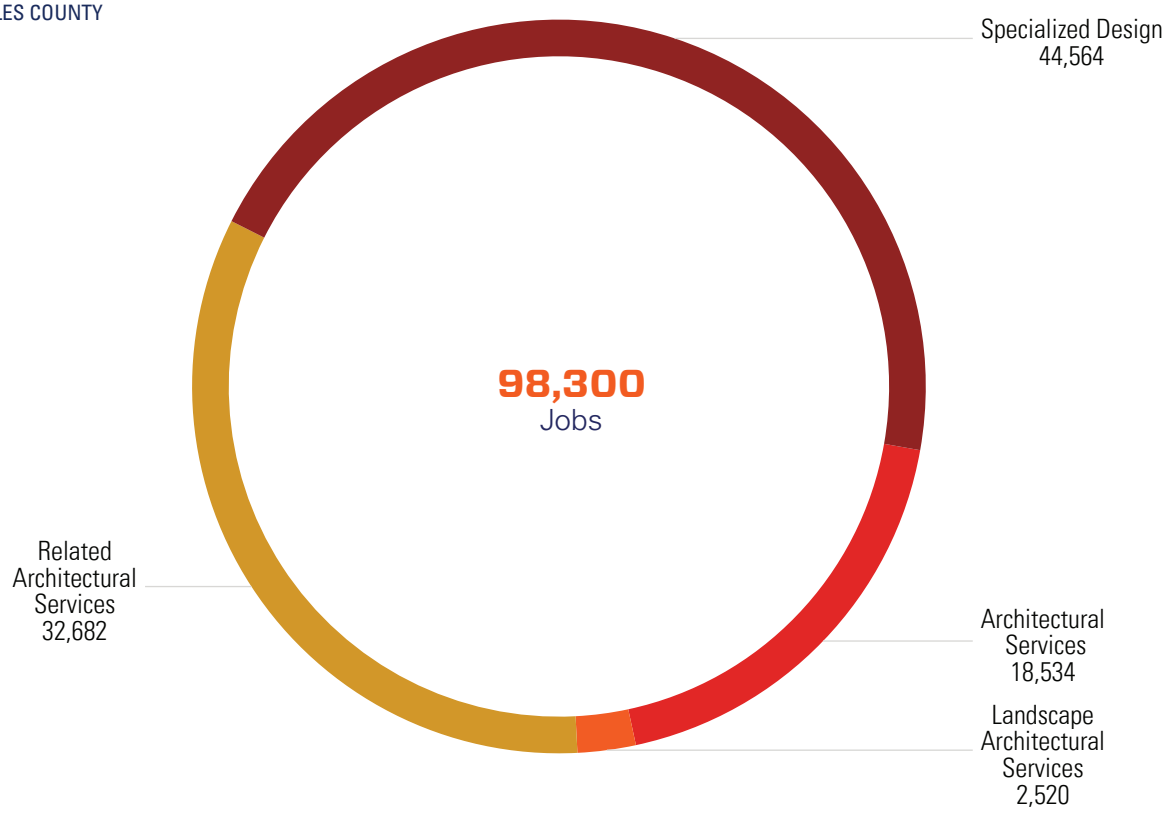
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.24: ARCHITECTURE & RELATED SERVICES EMPLOYMENT SHARE BY SUBSECTOR
2021

(A) CALIFORNIA



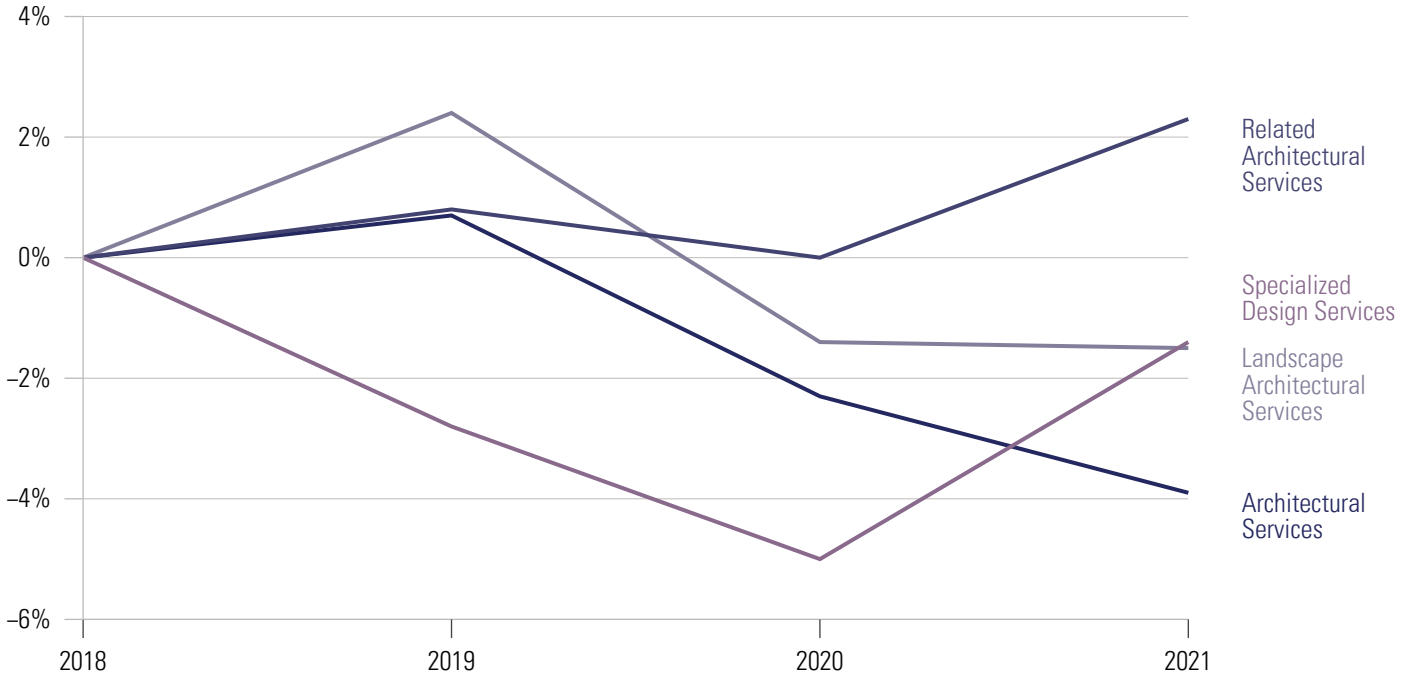
(B) LOS ANGELES COUNTY



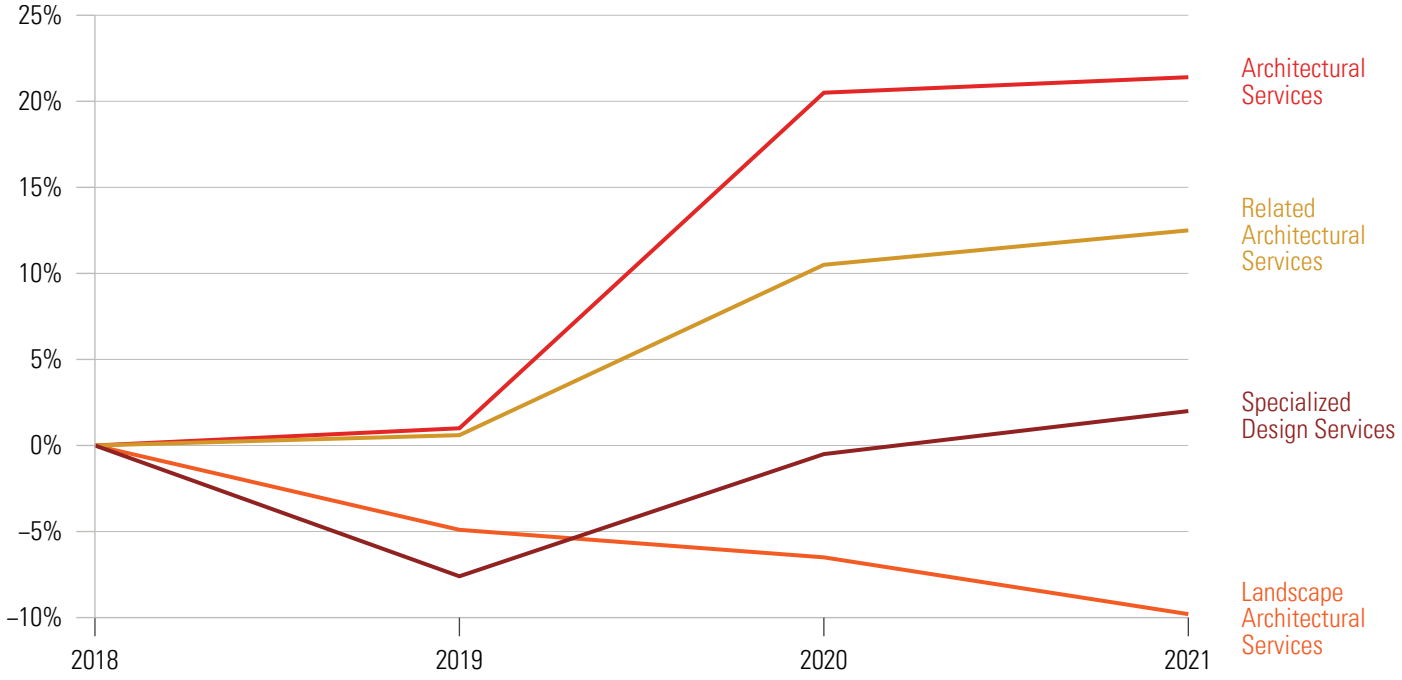
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.25: ARCHITECTURE & RELATED SERVICES EMPLOYMENT GROWTH BY SUBSECTOR IN CALIFORNIA AND LOS ANGELES 2018 to 2021

(A) CALIFORNIA

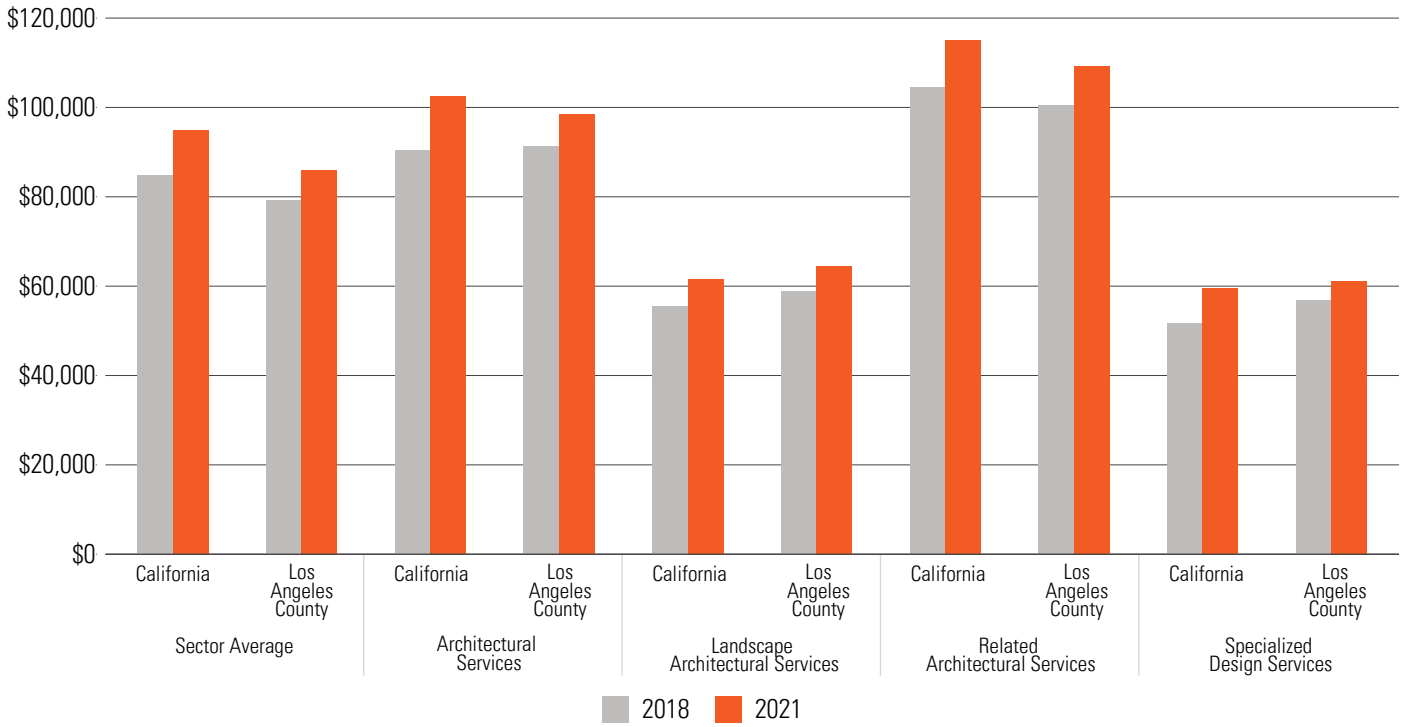


(B) LOS ANGELES COUNTY



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

FIGURE 2.26: AVERAGE ANNUAL WAGES FOR ARCHITECTURE & RELATED SERVICES BY SUBSECTOR
2018 to 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

TECHNOLOGY SPOTLIGHT: ARCHITECTURE & RELATED SERVICES

Sim Cities

The bridge between video game design and architecture—two disciplines dedicated to worldbuilding and shaping the user experience—dates back decades. For much of this time, the influence and application of architectural design was more evident in video games than vice versa. Players can navigate a facsimile of Los Angeles in *Grand Theft Auto 5*, Renaissance-era Florence in *Assassin's Creed*, and fantastical lands in *BioShock*. More urban design-oriented gamers have long enjoyed the digital city planning sandboxes that are *SimCity* and *Cities: Skylines*; indeed, it is even possible to earn a master's degree in "videogame urbanism," such as the one offered at University College London's Bartlett School of Architecture.[33] That game developers themselves turn to architecture for inspiration should not be surprising, as Thiago Klafke of Irvine-based Blizzard Entertainment notes:

> *"From a definitive standpoint, games are more or less architectural, since they are built environments. Similar to any architecture project, games are constructed and treated with material and textures. The added value, however, is not how accurate the city is or the HD quality of the graphics—although to be fair, they do elevate the gaming experience in phenomenal ways—it is in fact the storytelling: the journey and experience of going from point A to point B and interacting with the environment built by the designers. It is building momentum through one's engagement with the gamified urban composition."*[34]

In recent years, the relationship between the gaming and the architecture fields has become more symbiotic. Gaming technology like Unreal Engine 5 is not only transforming how architects do their work but the very nature of the work itself. The rise of digital twins, or exact virtual models that sit alongside their physical counterparts in the built world, has unleashed a universe of possibilities far beyond the purview of an Xbox or PlayStation. Offering visualization, forecasting, and diagnostic capabilities, digital twin cities provide architects and planners with a powerful set of next-generation capabilities.

Whereas some firms are constructing virtual cities with an eye towards the metaverse,[35] other enterprises are aiming to address more immediate issues. Los Angeles, for example, recently announced plans to launch of a digital twin of the Bunker Hill neighborhood to test a range of decarbonization efforts.[36] With other cities likely to follow suit and applications extending to other sectors like health care and manufacturing, the market for digital twin technology is expected to grow from $3 billion as of 2020 to $280 billion by 2030.[37] The true value architects can contribute with this technology will likely be much higher.

[33] Faber, Tom. "How architecture is helping game designers build new worlds." Financial Times. December 15, 2020. Retrieved from: https://www.ft.com/content/df4adc4c-0123-48ec-b132-7f7fa12a717d.

[34] Stouhi, Dima. "From Backdrop to Spotlight: The Significance of Architecture in Video Game Design." June 16, 2020. ArchDaily. Retrieved from: https://www.archdaily.com/938307/from-backdrop-to-spotlight-the-significance-of-architecture-in-video-game-design.

[35] Cherner, Jessica. "Zaha Hadid Architects Is Building a Virtual City for the Metaverse." Architectural Digest. March 25. 2022. Retrieved from: https://www.architecturaldigest.com/story/zaha-hadid-architects-building-virtual-city-metaverse.

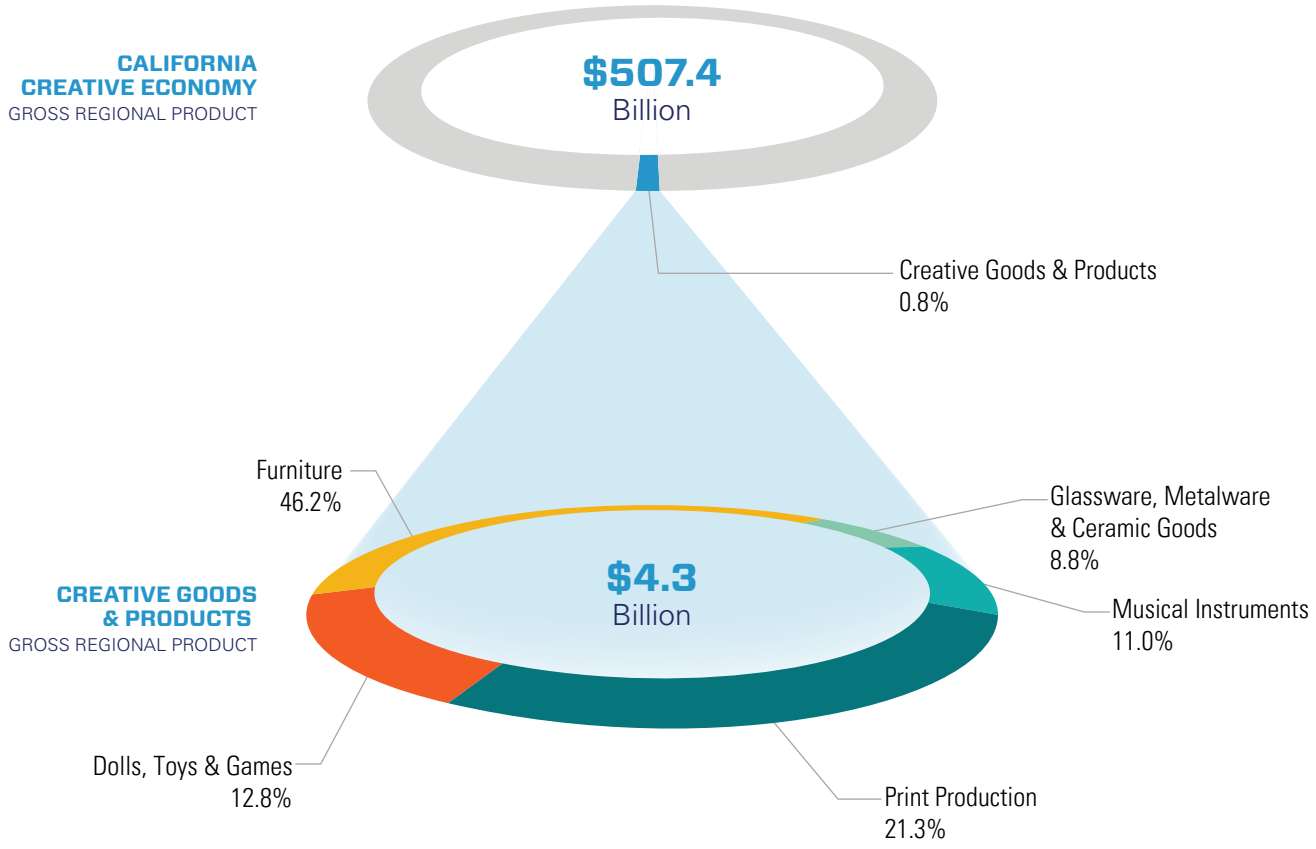
[36] Bahadursingh, Nathaniel. "Los Angeles the latest city to adopt twin technology to cut carbon emissions." Archinect. June 9. 2022. Retrieved from: https://archinect.com/news/article/150312805/los-angeles-the-latest-city-to-adopt-digital-twin-technology-to-cut-carbon-emissions.

[37] Poon, Linda. "How Cities Are Using Digital Twins Like a SimCity for Policymakers." Bloomberg. April 5, 2022. Retrieved from: https://www.bloomberg.com/news/features/2022-04-05/digital-twins-mark-cities-first-foray-into-the-metaverse.

PART 2: THE CREATIVE SECTORS

CREATIVE GOODS & PRODUCTS

FIGURE 2.27: CREATIVE GOODS & PRODUCTS SHARE OF CALIFORNIA CREATIVE ECONOMY GROSS REGIONAL PRODUCT
2021



Note: Values reported in 2022 dollars.

Source: U.S. Bureau of Economic Analysis; IMPLAN

The smallest of the creative sectors, Creative Goods & Products directly employs 42,300 workers in California, with about one third of these jobs located in Los Angeles County. Including ripple effects (indirect and induced), the Creative Goods & Products sector supported nearly 77,000 jobs and generated $4.3 billion in GRP across the state. The impact of the pandemic on sector jobs slightly accelerated previous downward trends in the sector; by 2020, the sector lost 16% and 20% of jobs in California and Los Angeles County, respectively, compared to 2018. And while there was job growth in 2021, the sector still remains 14% (California) and 18% (Los Angeles) below pre-pandemic levels.

Like trends in other sectors, creative or otherwise, Creative Goods & Products saw a spike in self-employed workers in 2020 while salaried and gig workers declined. In California, self-employed workers increased over 200% in 2020 whereas salaried and gig workers dropped about 12% each. Although the number of self-employed workers declined slightly in 2021, there are still significantly more of these types of workers now compared to 2019.

Subsector Analysis

The pandemic created a unique challenge for the Creative Goods & Products sector. Demand for certain goods like games, musical instruments, and art supplies skyrocketed as COVID-19 confined people to their homes and fostered interest in new hobbies and alternative forms of entertainment. As a result, this sudden rise in demand for certain products created a backlog due to supply chain disruptions. Rising production costs abroad compounded difficulties for businesses and cut into profit margins.[38] [39]

One way to address the challenge was to explore how production processes could shift to meet growing demand by moving manufacturing facilities closer to home, relocating to less expensive locations, or a combination thereof. In some cases, and especially in an expensive and highly regulated state like California, manufacturers chose to move to other states like Texas or Arizona. For instance, O.W. Lee, an outdoor furniture manufacturer, moved operations from Ontario, California, to Comfort, Texas, in early 2021.[40]

In other cases, some California-based manufacturing operations were able to ramp up production and meet growing demand, which helps explain employment spikes in the Musical Instruments subsector. Across the United States, about 16 million people have picked up a guitar over the last two years.[41] In California, while subsector employment initially declined 6% in 2020, jobs increased by 12% in 2021. Fender Musical Instruments Corporation, the world's largest electric guitar manufacturer, is expanding its manufacturing operations in the Inland Empire; the Corona facility will provide an additional 100,000 square feet of space due to rising product demand and create hundreds of new jobs for the region's workforce.

[38] Wells, Charlie. "Why Your New Couch Will Be Delivered Only in 2022." Bloomberg Wealth. September 25, 2021. Retrieved from: https://www.bloomberg.com/news/articles/2021-09-25/supply-chain-delays-furniture-buyers-feel-they-re-waiting-forever-for-a-couch.

[39] Curran, Enda. "China's Soaring Factory Costs Send Inflation Signal to the World." Bloomberg Businessweek. May 11, 2021. Retrieved from: https://www.bloomberg.com/news/articles/2021-05-11/china-s-soaring-factory-export-costs-send-inflation-warning-to-the-world.

[40] Iszler, Madison. "Outdoor furniture maker moving HQ from California to Texas." San Antonio Express News. September 23, 2020. Retrieved from: https://www.expressnews.com/business/local/article/Outdoor-furniture-maker-moving-HQ-from-California-15591404.php.

[41] Schifrin, Matt. "Shredding The Pandemic: The Covid Fender Boom." March 18, 2022. Retrieved from: https://www.forbes.com/sites/schifrin/2022/03/18/shredding-the-pandemic-the-covid-fender-boom/?sh=2f77fc0a5fe0.

TABLE 2.28: TOTAL ECONOMIC IMPACT OF THE CREATIVE GOODS & PRODUCTS SECTOR
2021

(A) CALIFORNIA

76,700

JOBS

$6B

LABOR INCOME

$9B

DIRECT GROSS VALUE ADDED

$2B

TAX REVENUE

(B) LOS ANGELES COUNTY

25,000

JOBS

$2B

LABOR INCOME

$3B

DIRECT GROSS VALUE ADDED

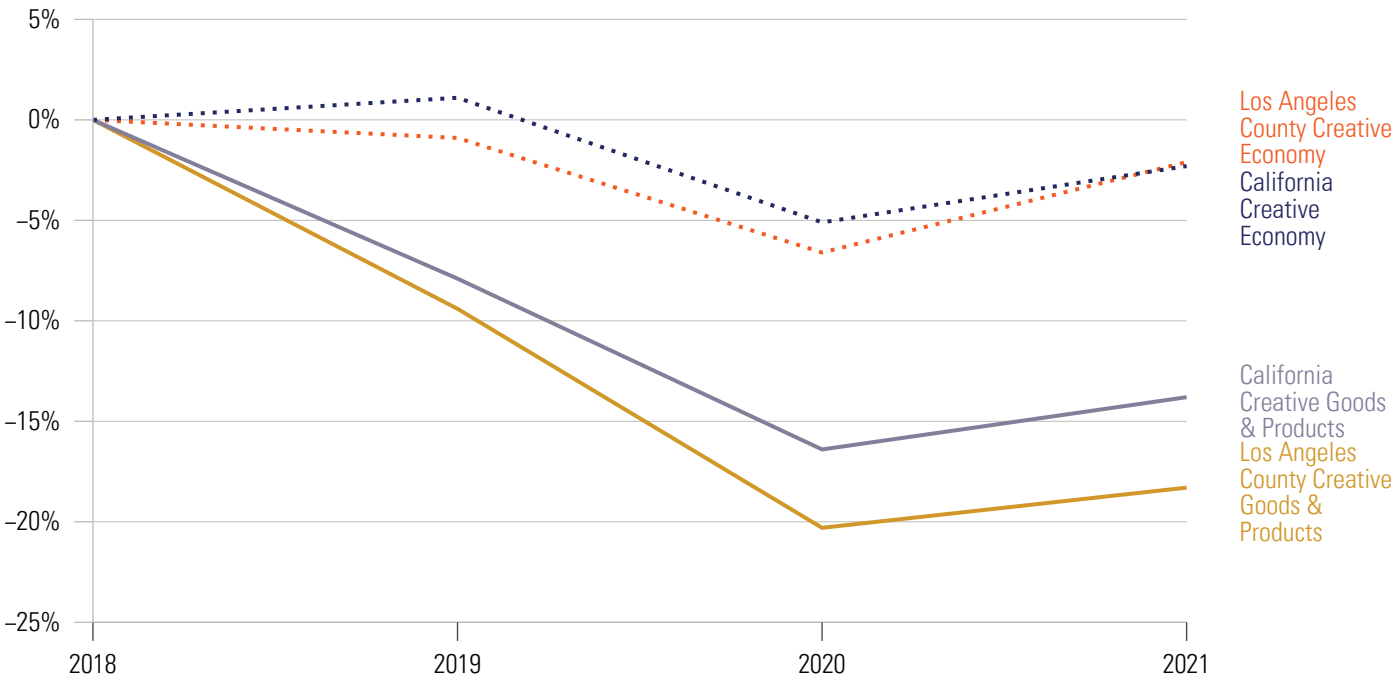
$1B

TAX REVENUE

Note: Values reported in 2022 dollars. Total economic impact comprises direct, indirect, and induced impacts. See Appendix for detailed results.

Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages, U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.29: CHANGE IN CREATIVE GOODS & PRODUCTS EMPLOYMENT IN CALIFORNIA AND LOS ANGELES COUNTY
2018 to 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community

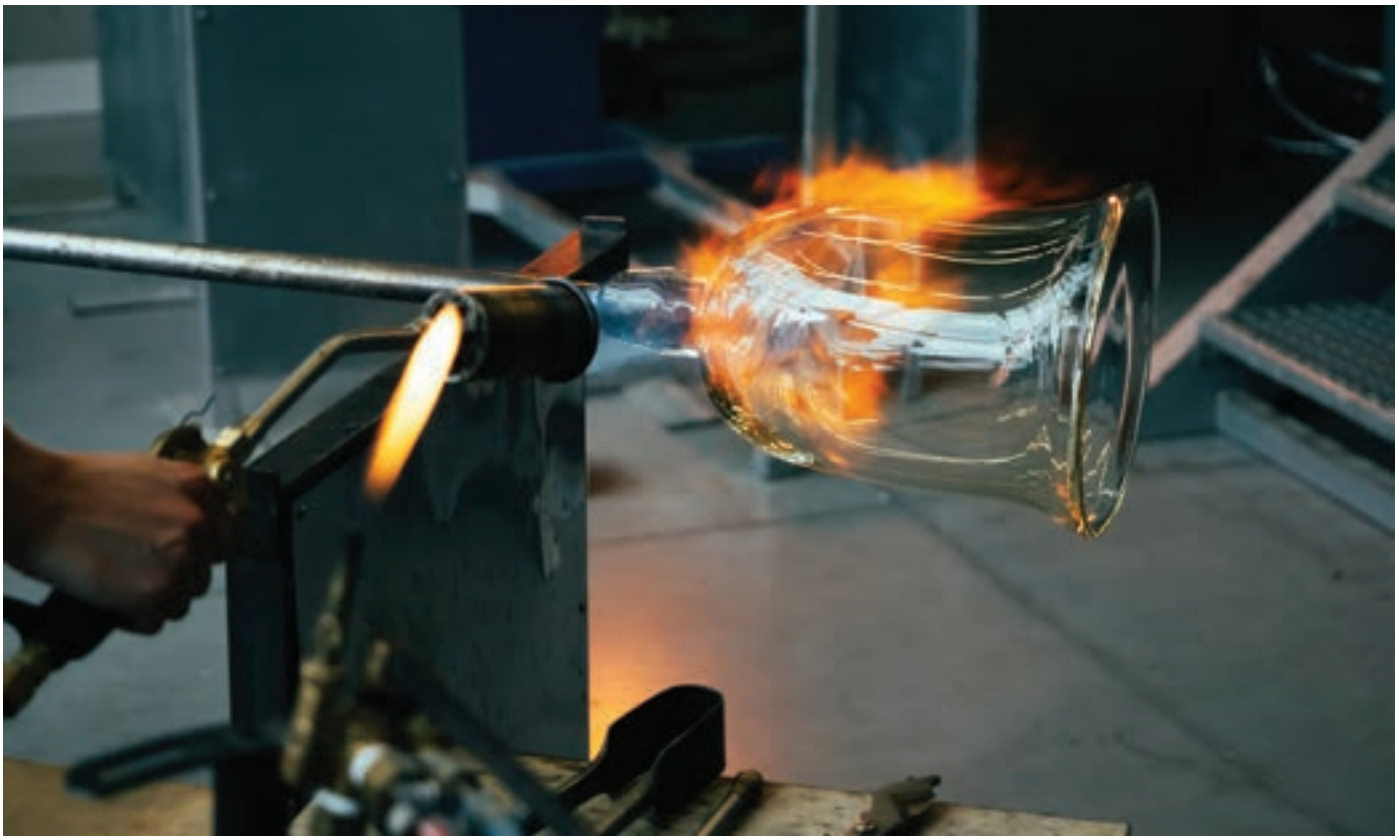
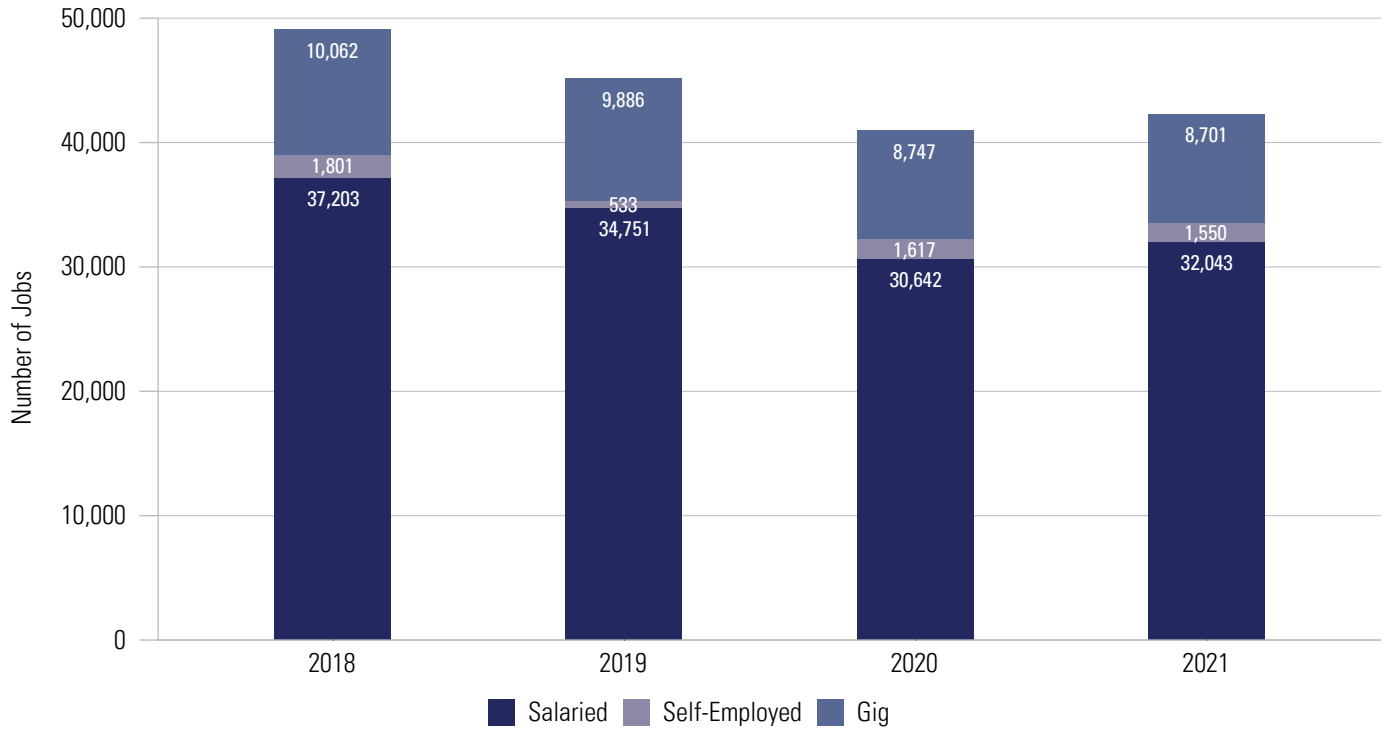
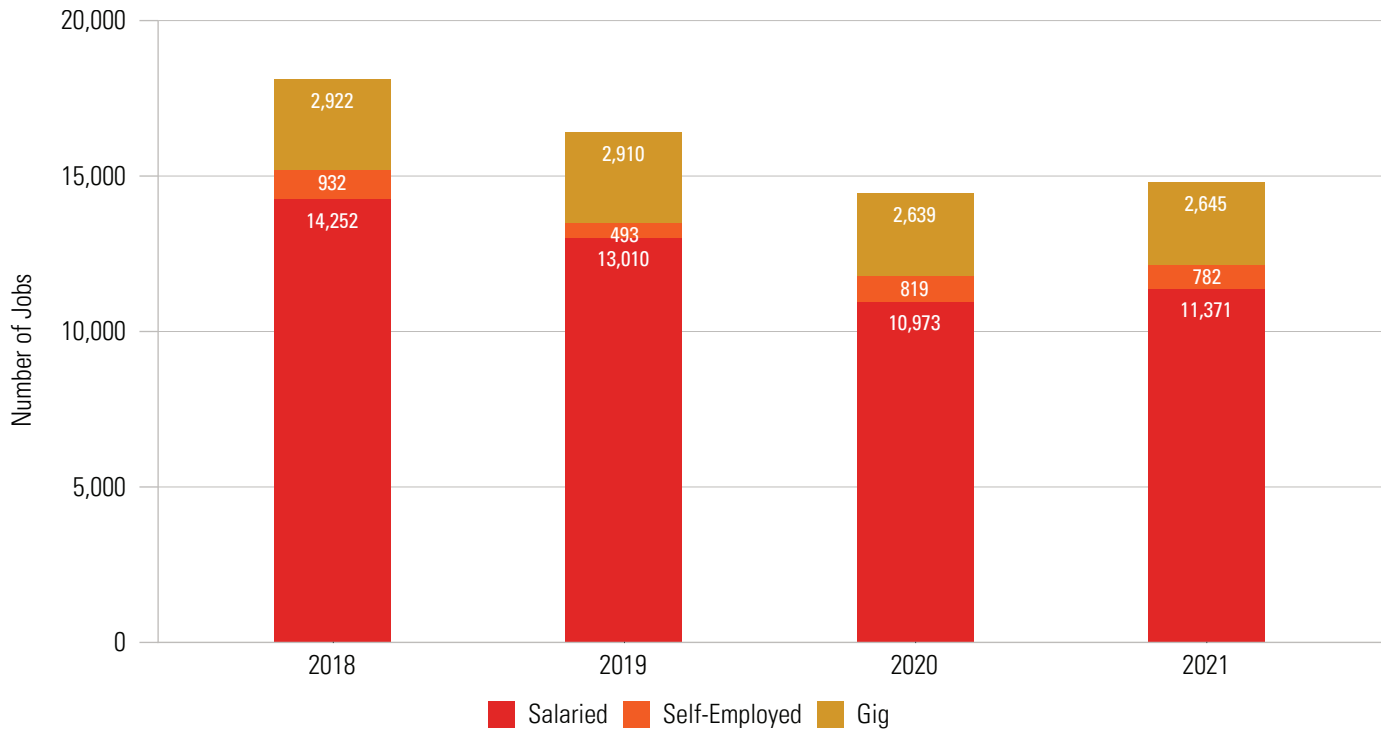


FIGURE 2.30: CREATIVE GOODS & PRODUCTS EMPLOYMENT BY WORKER TYPE
2018 to 2021

(A) CALIFORNIA

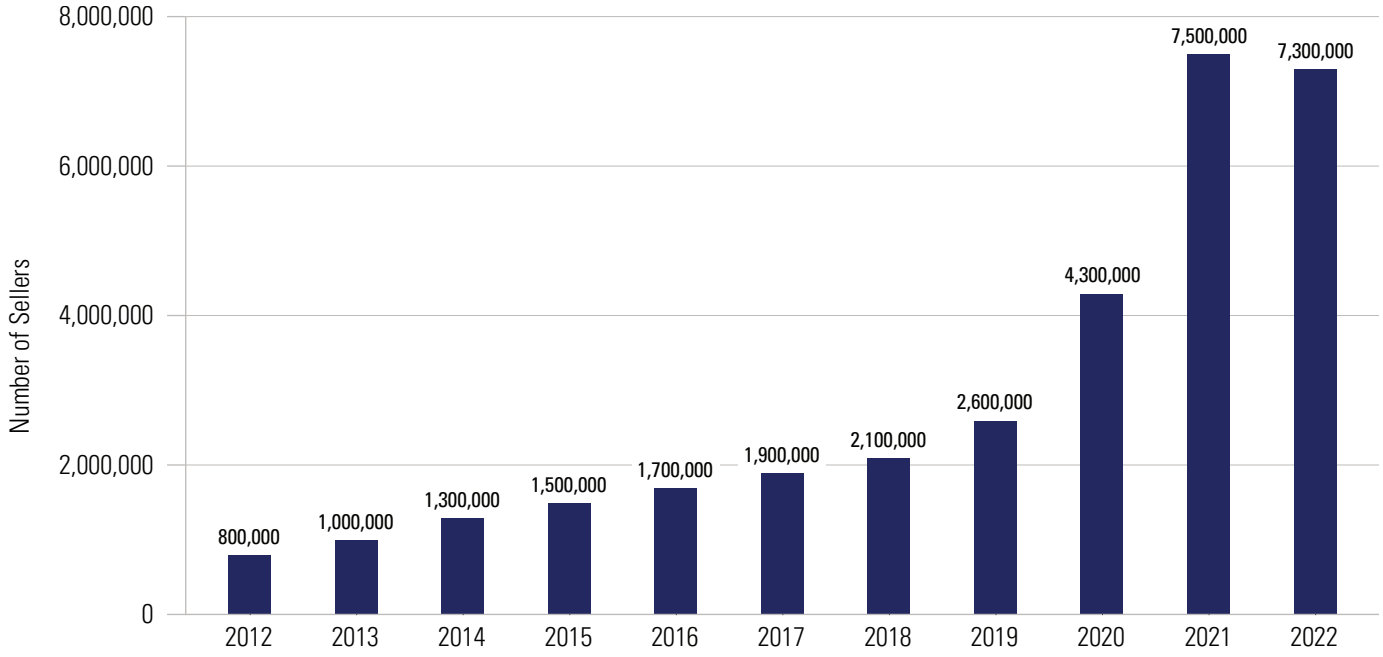


(B) LOS ANGELES COUNTY



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey

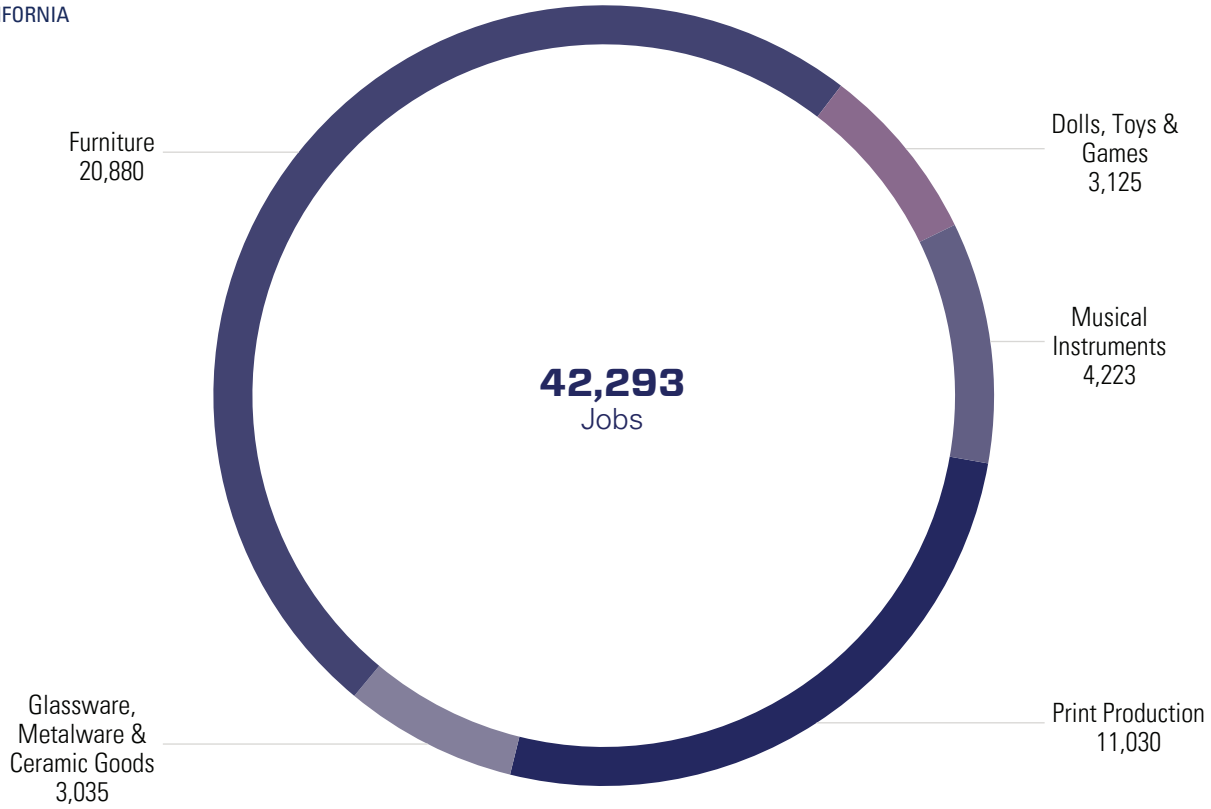
FIGURE 2.31: NUMBER OF SELLERS ON ETSY IN THE UNITED STATES



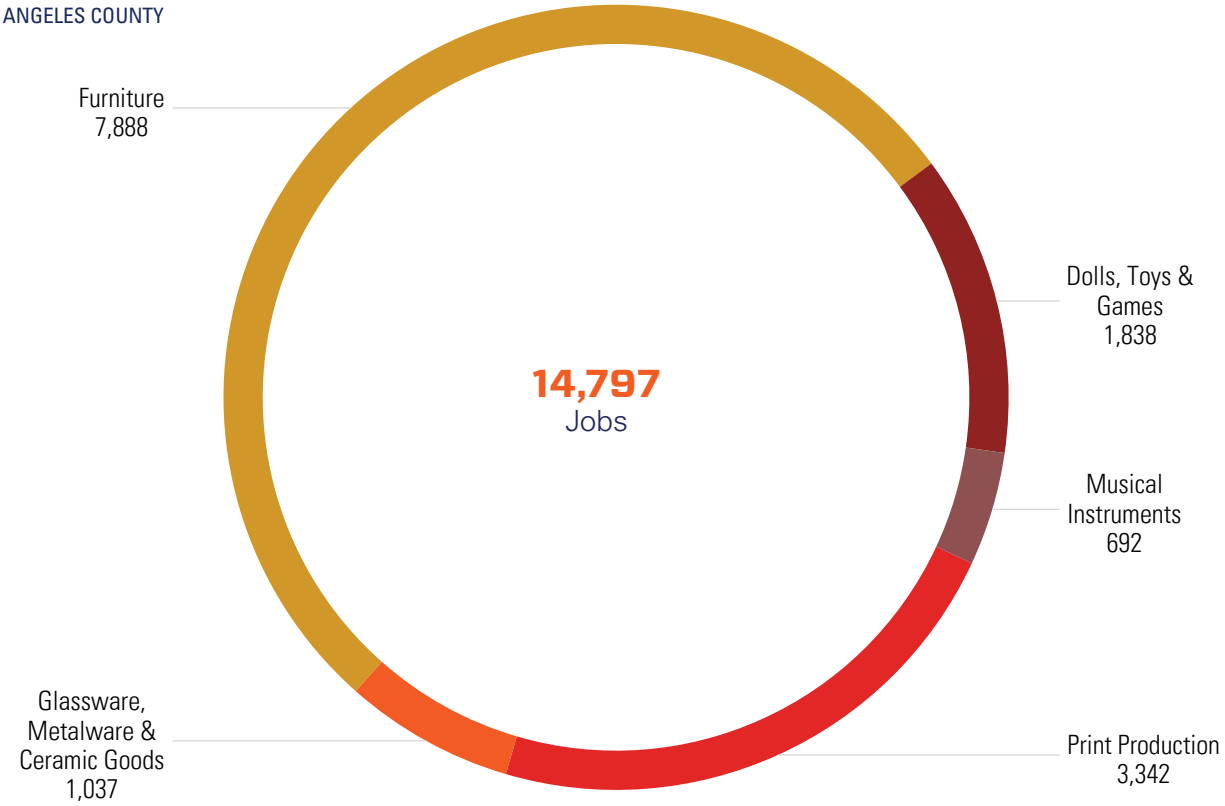
Source: Etsy

FIGURE 2.32: CREATIVE GOODS & PRODUCTS EMPLOYMENT SHARE BY SUBSECTOR
2021

(A) CALIFORNIA



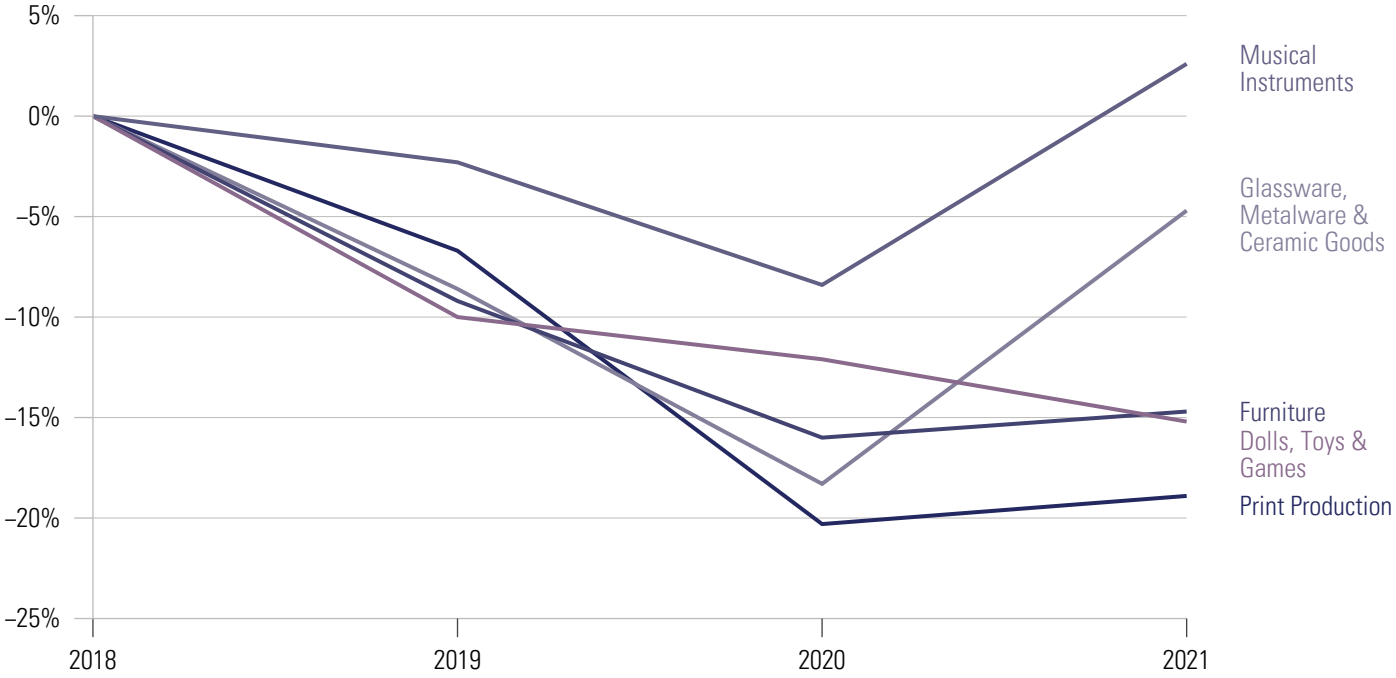
(B) LOS ANGELES COUNTY



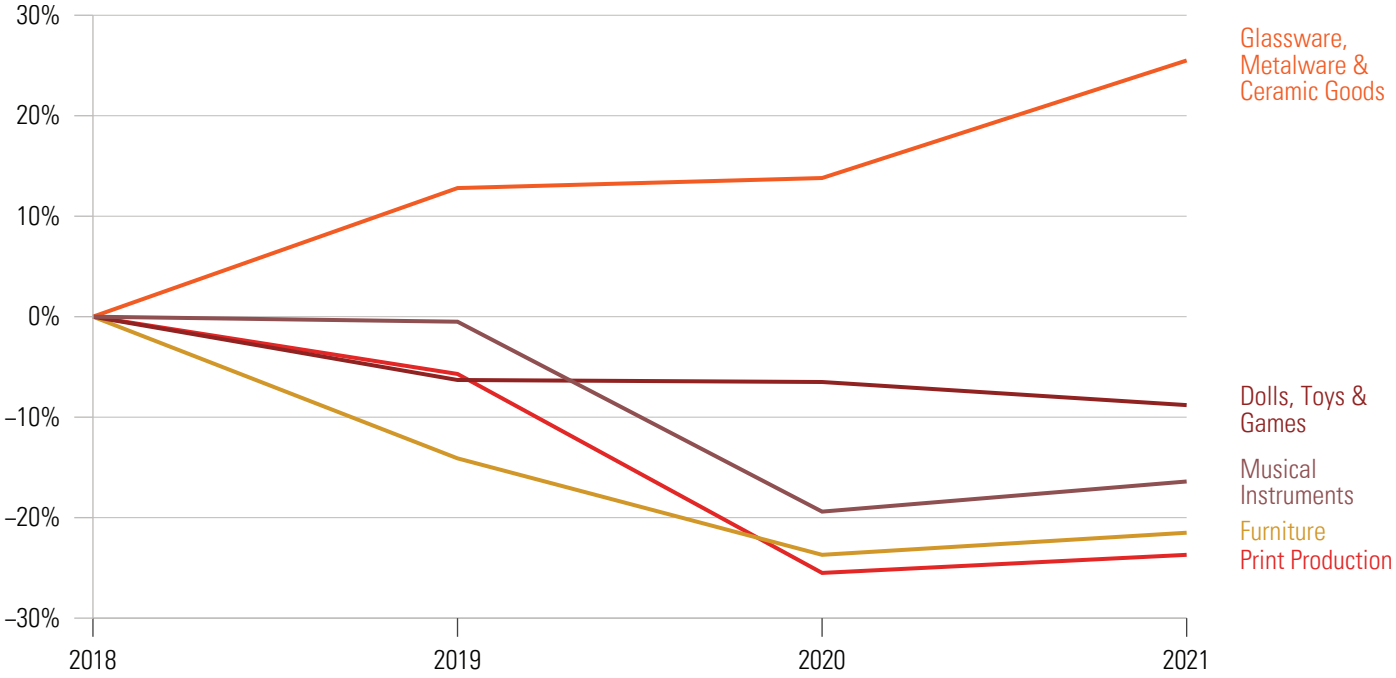
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.33: CREATIVE GOODS & PRODUCTS EMPLOYMENT GROWTH BY SUBSECTOR
2018 to 2021

(A) CALIFORNIA

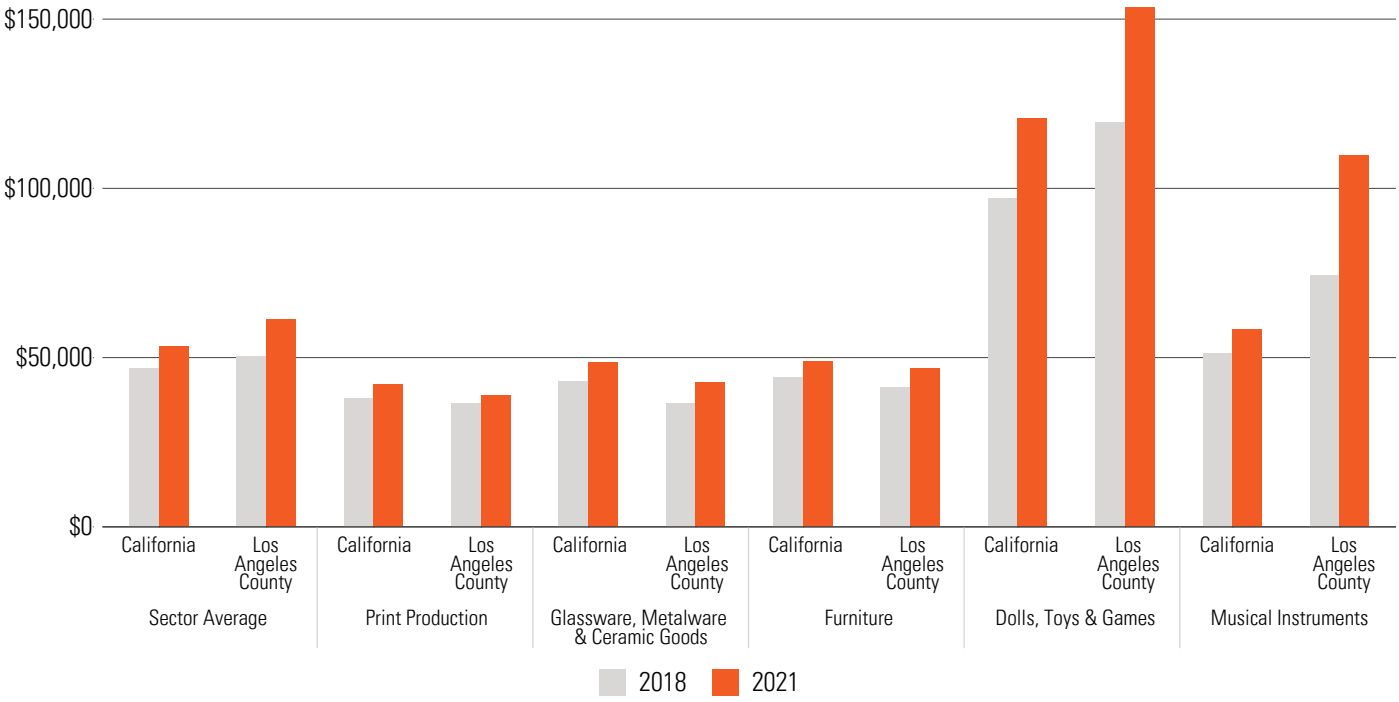


(B) LOS ANGELES COUNTY



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.34: AVERAGE ANNUAL WAGES FOR CREATIVE GOODS & PRODUCTS BY SUBSECTOR
2018 to 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

TECHNOLOGY SPOTLIGHT: CREATIVE GOODS & PRODUCTS

Barbie, Bugatti, and Blender

Extended reality is emerging as a "game changer" in the manufacturing of creative goods and products. Virtual prototyping affords businesses of all sizes the ability to test and optimize designs before building a series of physical prototypes, which can save time and costs.

Mattel's iconic Barbie brand has an ever-expanding number of product lines, each of which has distinct branding and packaging. The advances in technology and the collaborative integration allowed by Adobe's suite of tools, including Adobe Aero[43] that allows for design in 3D, has allowed Mattel to shift their Barbie packaging design process to a fully digital platform. Augmented reality and 3D software now allows for the rapid ideation of design concepts with global teams to quickly gain approval and feedback. The 3D mockups can communicate with various business units, all without a single material being wasted. "By not making physical comps, we're easily saving thousands of dollars a month on paper alone. Not to mention the cost for glue, tape, chip board, specialty materials, and all the labor that goes into assembly," says Barbie Packaging Designer Sal Velazquez.[44]

Virtual prototyping has been widely embraced by industrial design teams at major car companies as well. Ford, Volkswagen, GM, and Bugatti, among others, are reimagining workflows with the help of extended reality technology.[45] Bugatti Design Director Achim Anscheidt notes that it is not just a new passing fad. "Our virtual glasses these days are so good that we're getting very close to the final product," he says.[46] By using Blender 3D models, his team can get vital features and themes into shape in a virtual environment.[47] The design then moves to a more advanced CAD software called Alias when actual surfaces become involved and precise measurements are necessary. When finalized, this model can be used to develop tools for production. Additionally, because these models are also still viewable in VR, any necessary tweaks can be viewed in full scale.

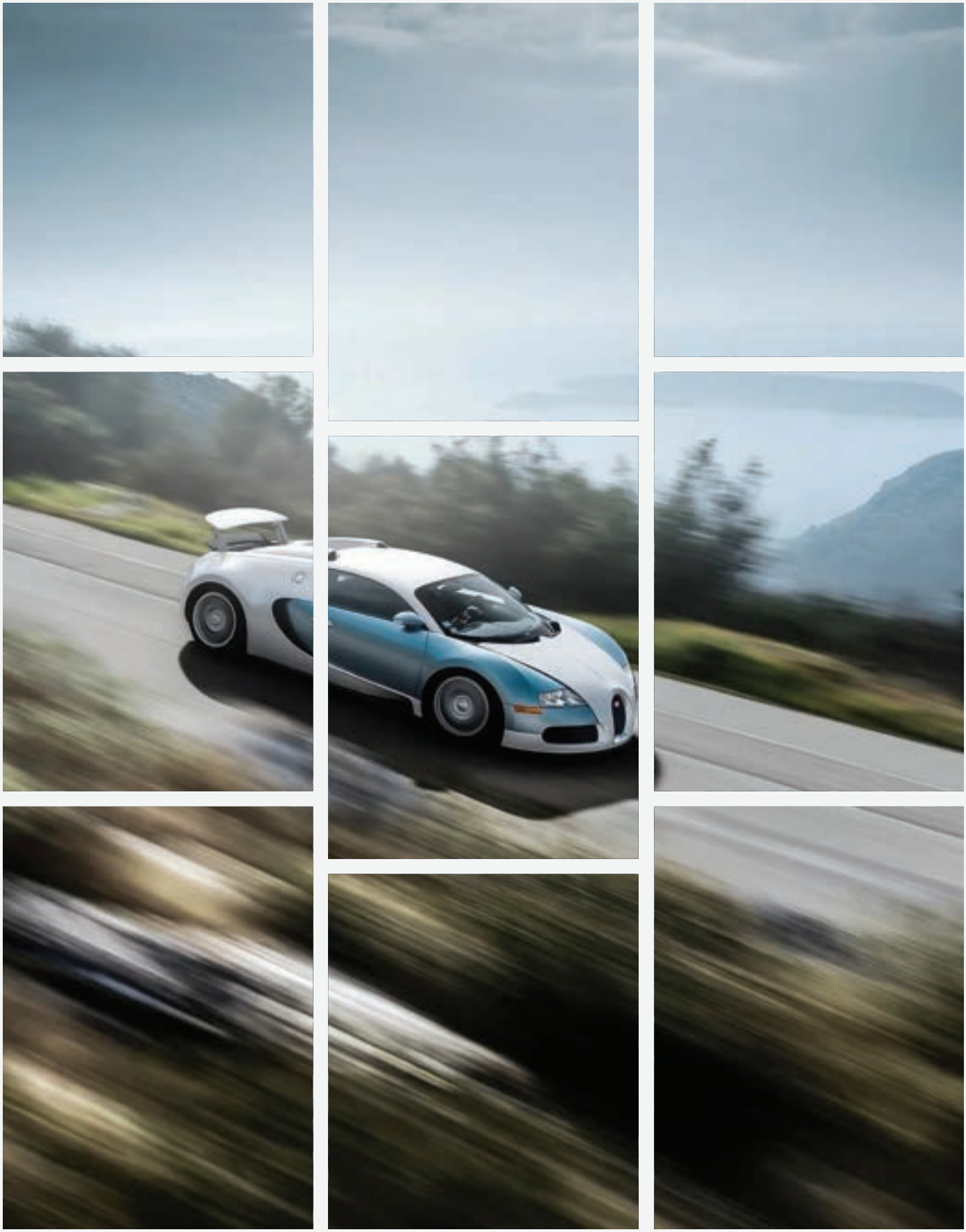
[43] Adobe Aero is a free app for creating and publishing AR experiences on mobile devices. It allows users to place 3D assets and animations in the real world using the camera on their devices and to share the experiences they create with others.

[44] Adobe Experience Cloud. "Mattel Revolutionizes Package Design for Barbie." Accessed January 22, 2023. Retrieved from: https://business.adobe.com/customer-success-stories/mattel-case-study.

[45] Edelstein, Stephen. "Ford Designers Are Using VR to Collaborate on Projects While Thousands of Miles Apart," The Drive, May 6, 2019. Retrieved from: https://www.thedrive.com/tech/27843/ford-designers-are-using-vr-to-collaborate-on-projects-while-thousands-of-miles-apart.

[46] Holderith, Peter. "The $5M Bugatti Mistral Only Took 9 Months to Develop Thanks to VR." The Drive, August 29, 2022. Retrieved from: https://www.thedrive.com/news/the-5m-bugatti-mistral-only-took-9-months-to-develop-thanks-to-vr.

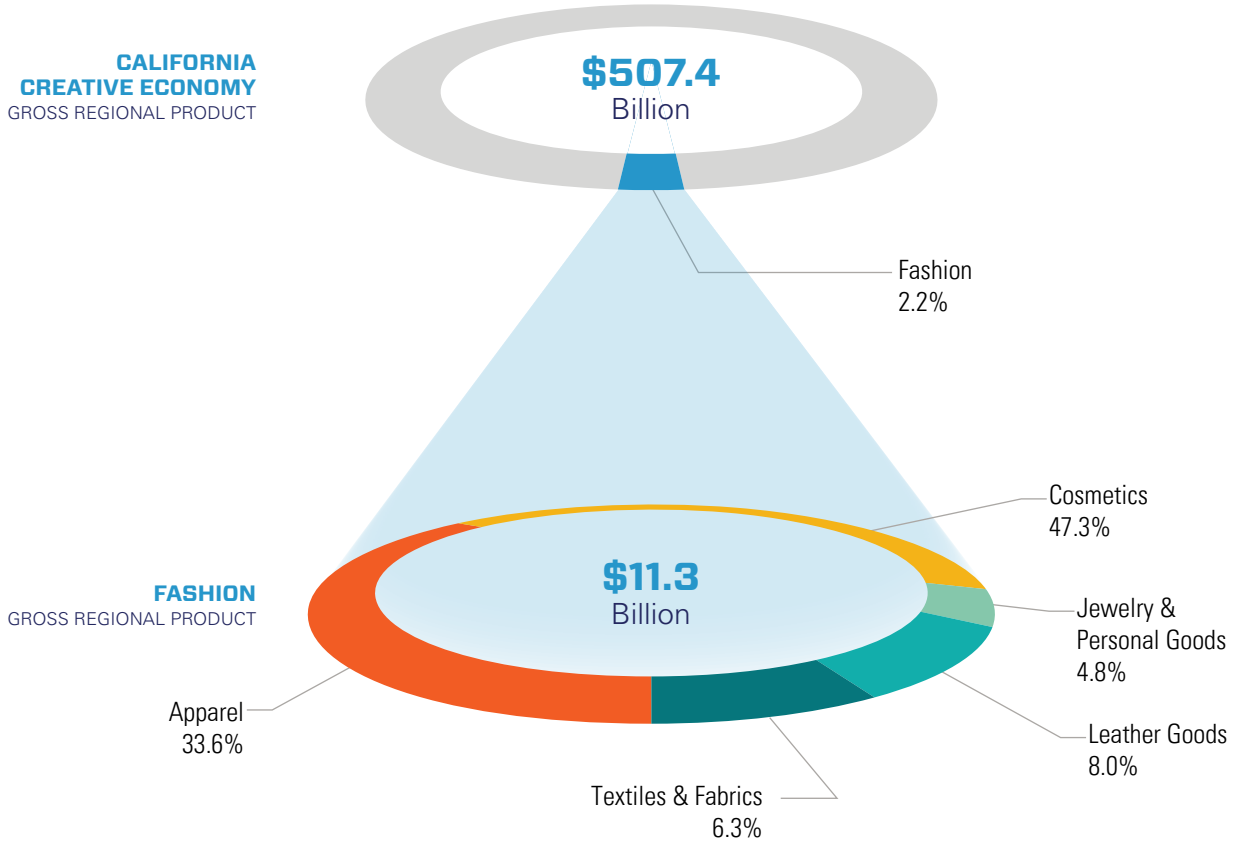
[47] Blender is a free and open-source 3D creation software that can be used for a variety of tasks, including creating models, animations, and visual effects. It also has built-in support for creating VR content, such as 360-degree panoramic renders and VR scenes that can be viewed using virtual reality headsets.



PART 2: THE CREATIVE SECTORS

FASHION

FIGURE 2.35: FASHION SHARE OF CALIFORNIA CREATIVE ECONOMY GROSS REGIONAL PRODUCT
2021



Note: Values reported in 2022 dollars.

Source: U.S. Bureau of Economic Analysis; IMPLAN

In 2021, California's Fashion sector directly generated $11.3 billion in gross regional product and comprised over 62,600 jobs—an improvement following the pandemic, which only exacerbated the sector's long-term steady decline. Including ripple effects (indirect and induced), the Fashion sector supported 120,800 jobs and generated $20 billion in GRP statewide. Nearly two-thirds of the state's Fashion sector is based in Los Angeles County, where sector employment remains 18% below pre-pandemic levels, compared to a 13% decline statewide.

In both California and Los Angeles County, salaried and self-employed workers accounted for pandemic-related job losses and have yet to rebound. By contrast, the number of gig workers grew in both 2020 and 2021. Between 2018 and 2021, the number of gig workers in Fashion grew 15% across California and 54% in Los Angeles County. The rise in online clothing resale apps like Poshmark and Depop have increased the appeal and ease of selling items as a side business. Indeed, by 2030, the online secondhand-clothing market is expected to more than triple.[48]

[48] Ramirez, Dalia. "Kick-start your online clothing resale gig." The Frederick News-Post. June 16, 2022. Retrieved from: https://www.fredericknewspost.com/news/economy_and_business/kick-start-your-online-clothing-resale-gig/article_06105215-424b-5f67-94a7-36d20828f664.html.

Subsector Analysis

The downward trend in Fashion employment is largely due to longer-term declines in manufacturing jobs across the United States. These shifts are especially apparent in the Apparel subsector, which accounts for over 60% of Fashion sector employment in California and Los Angeles County. In 2021, Apparel employment declined 19% and 21% in California and Los Angeles, respectively, compared to 2018. But there were some exceptions. One category of discretionary goods that people grew more interested in during the pandemic was Cosmetics, especially skincare. In California, employment in the Cosmetics subsector sits 8.3% above pre-pandemic levels in 2021 as people continued their interest in self-care.

At the same time, there have been new opportunities for growth that the data has yet to capture. For one, the fashion world is settling into a new home. Relocating from epicenters like Milan, Paris, and New York, many brands are increasingly debuting their looks in Los Angeles. As a city that is perceived as a relative newcomer on the global fashion scene, Los Angeles has not historically adhered to the rules or notions of traditional fashion showing. The relaunch of Fashion Week in Los Angeles incorporates adjacent industries that have a strong presence in the region: tech, entertainment, wellness, and sustainability.

Los Angeles Fashion Week President Ciarra Pardo sees LAFW as creating "a playground where all of these verticals can foster new ways of presenting in a seasonless environment that does not pigeonhole brands into a formal way of showing collections, while of course still paying homage to the traditional concept of a fashion week."[49] Once a staple of New York Fashion week, Gypsy Sport's Rio Uribe has recently relocated to Los Angeles where he's seen to be helping to recharge the city as a capital of style with substance. "I love NY, but the industry is way too capitalistic for the raw creativity that is thriving in LA right now," he asserts.[50] The Los Angeles brand's "genderless, glam, Chicano-inspired street style" recently announced a collaboration with Urban Outfitters, which will bring it to its widest audience yet.[51]

[49] Drohan, Freya. "LA Fashion Week is Relaunching Next Month—Here's Everything You Need To Know." Fashion Week Daily. September 26, 2022. Retrieved from: https://fashionweekdaily.com/la-fashion-week-is-relaunching-next-month-heres-everything-you-need-to-know/.

[50] Moran, Justin. "Gypsy Sport Is Recharging Los Angeles Fashion." Paper Magazine. November 9, 2022. Retrieved from: https://www.papermag.com/gypsy-sport-lafw-spring-2023-2658473727.html?rebelltitem=10#rebelltitem10.

[51] Moore, Booth. "Gypsy Sport Brings Genderless, Chicano-inspired Style to Urban Outfitters." Yahoo. January 9, 2023. Retrieved from: https://finance.yahoo.com/news/gypsy-sport-brings-genderless-chicano-162313061.html.

TABLE 2.36: TOTAL ECONOMIC IMPACT OF FASHION IN CALIFORNIA AND LOS ANGELES COUNTY
2021

(A) CALIFORNIA

120,000

JOBS

$9B

LABOR INCOME

$20B

DIRECT GROSS VALUE ADDED

$4B

TAX REVENUE

(B) LOS ANGELES COUNTY

66,900

JOBS

$5B

LABOR INCOME

$10B

DIRECT GROSS VALUE ADDED

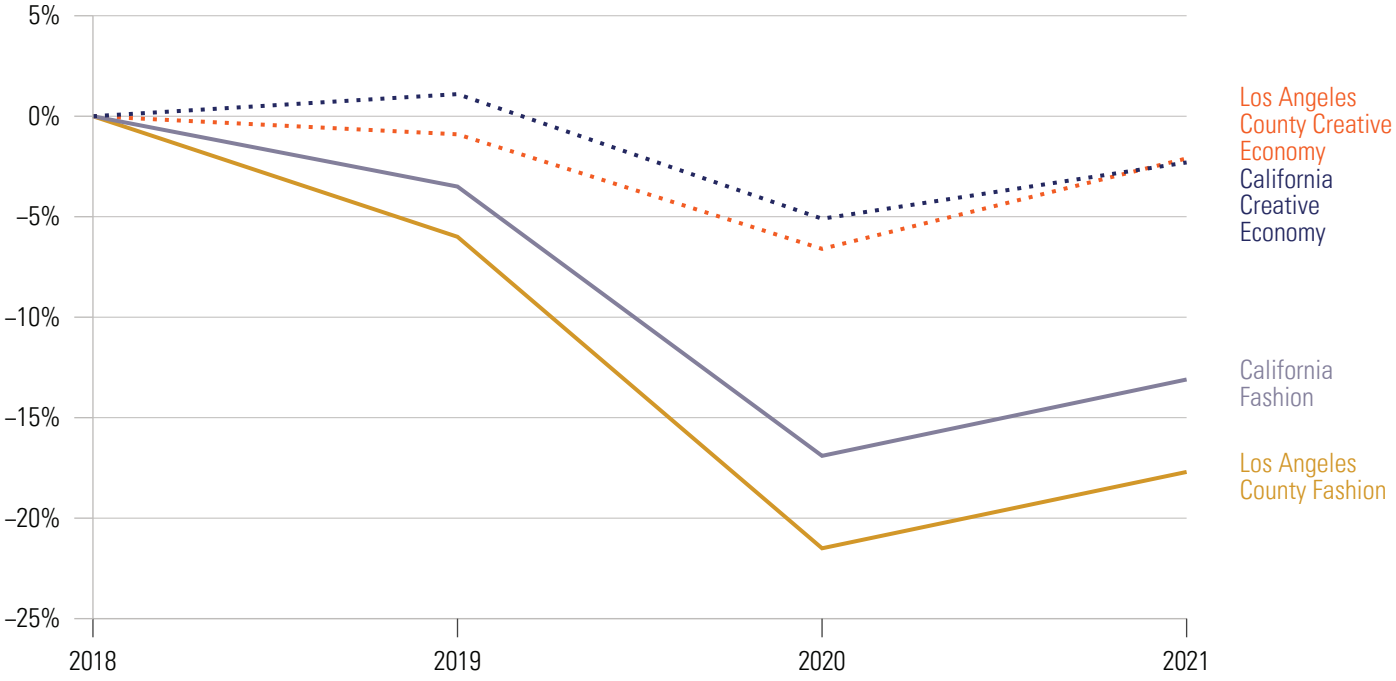
$2B

TAX REVENUE

Note: Values reported in 2022 dollars. Total economic impact comprises direct, indirect, and induced impacts. See Appendix for detailed results.

Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.37: CHANGE IN FASHION EMPLOYMENT IN CALIFORNIA AND LOS ANGELES COUNTY
2018 to 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

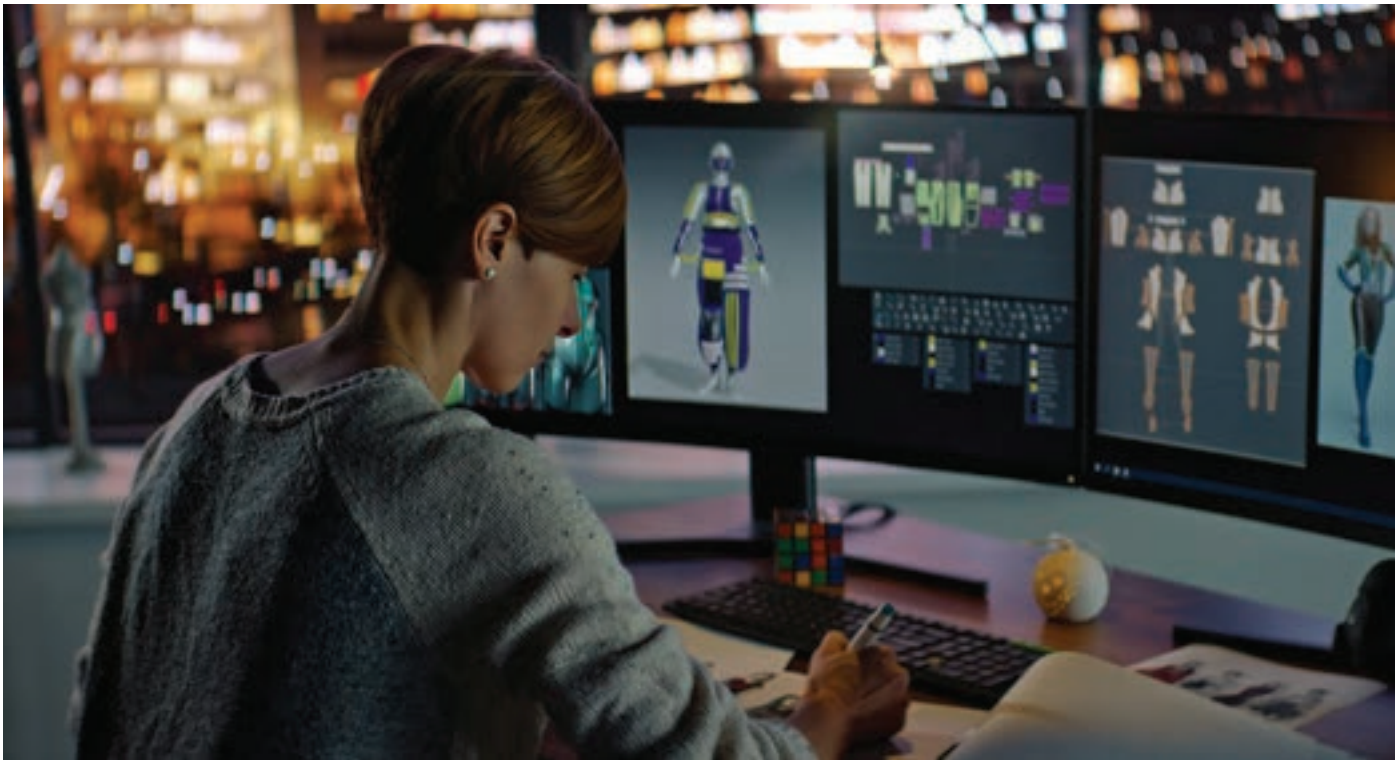
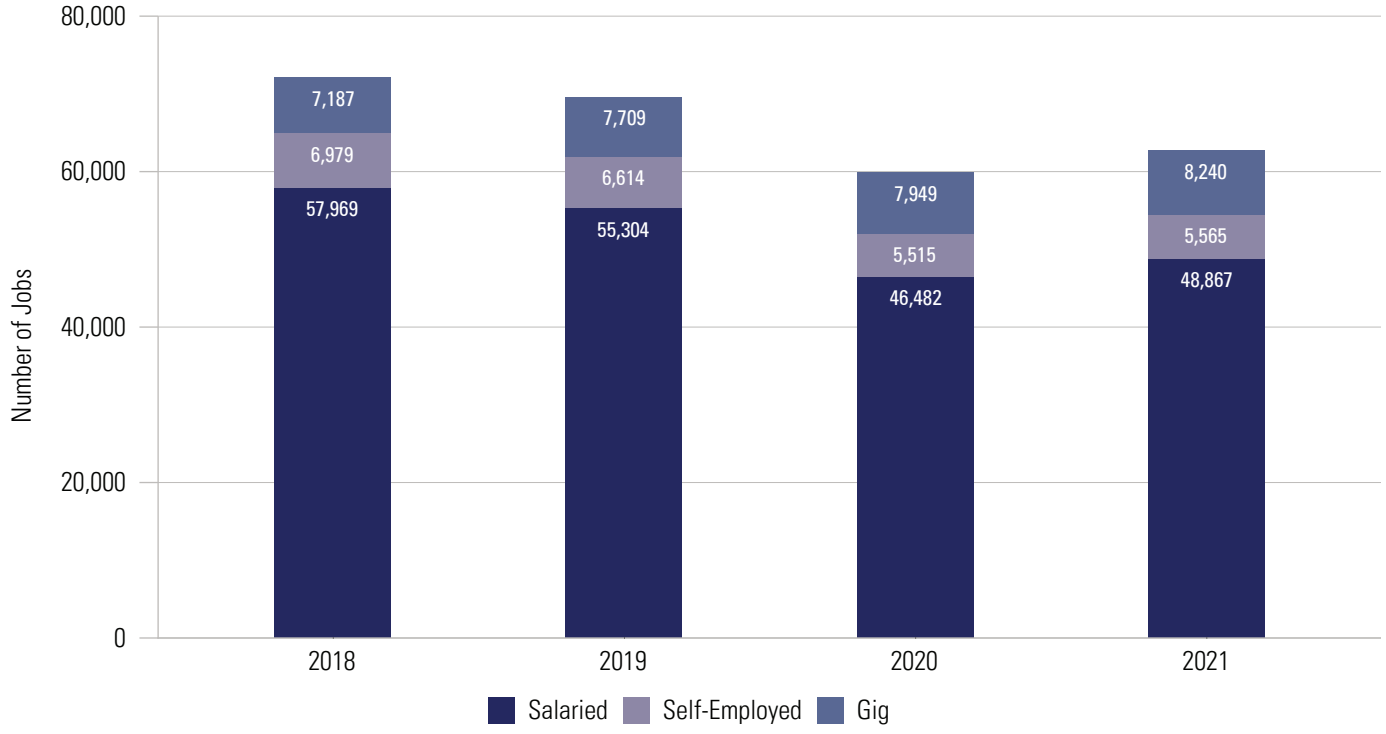


FIGURE 2.38: FASHION EMPLOYMENT BY WORKER TYPE
2018 to 2021

(A) CALIFORNIA

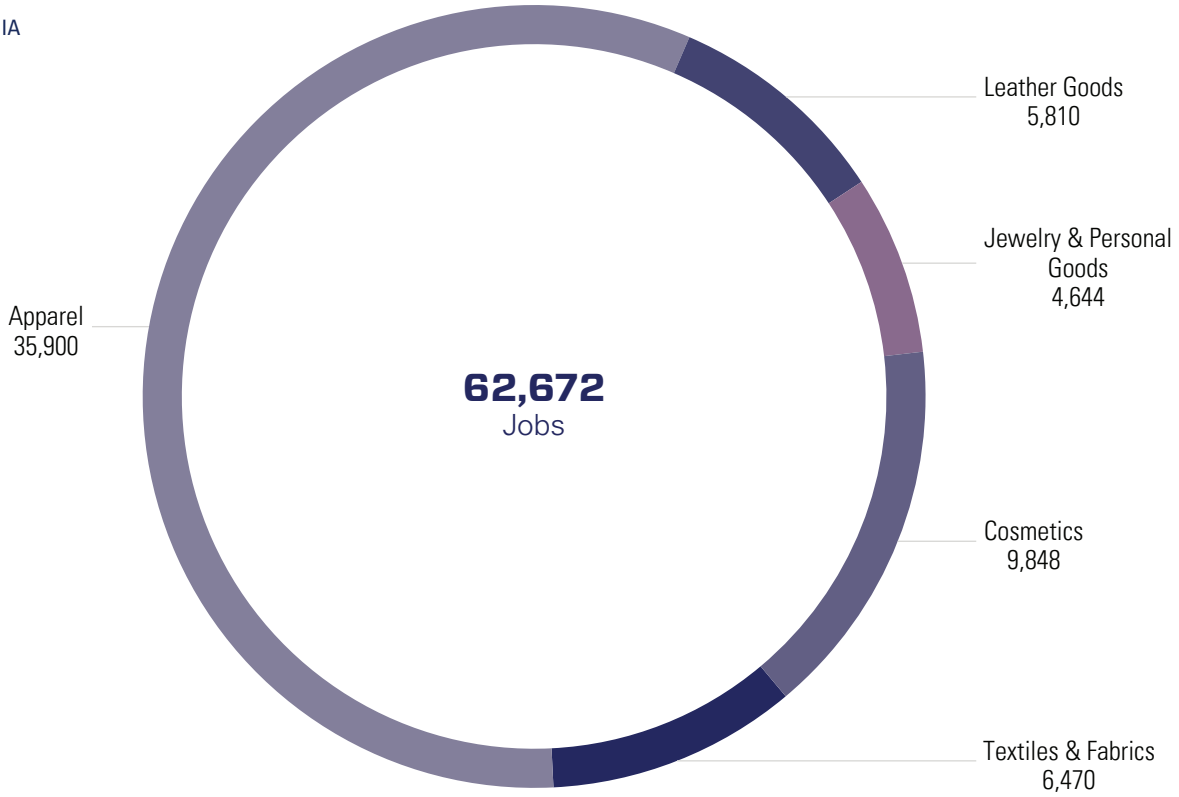


(B) LOS ANGELES COUNTY

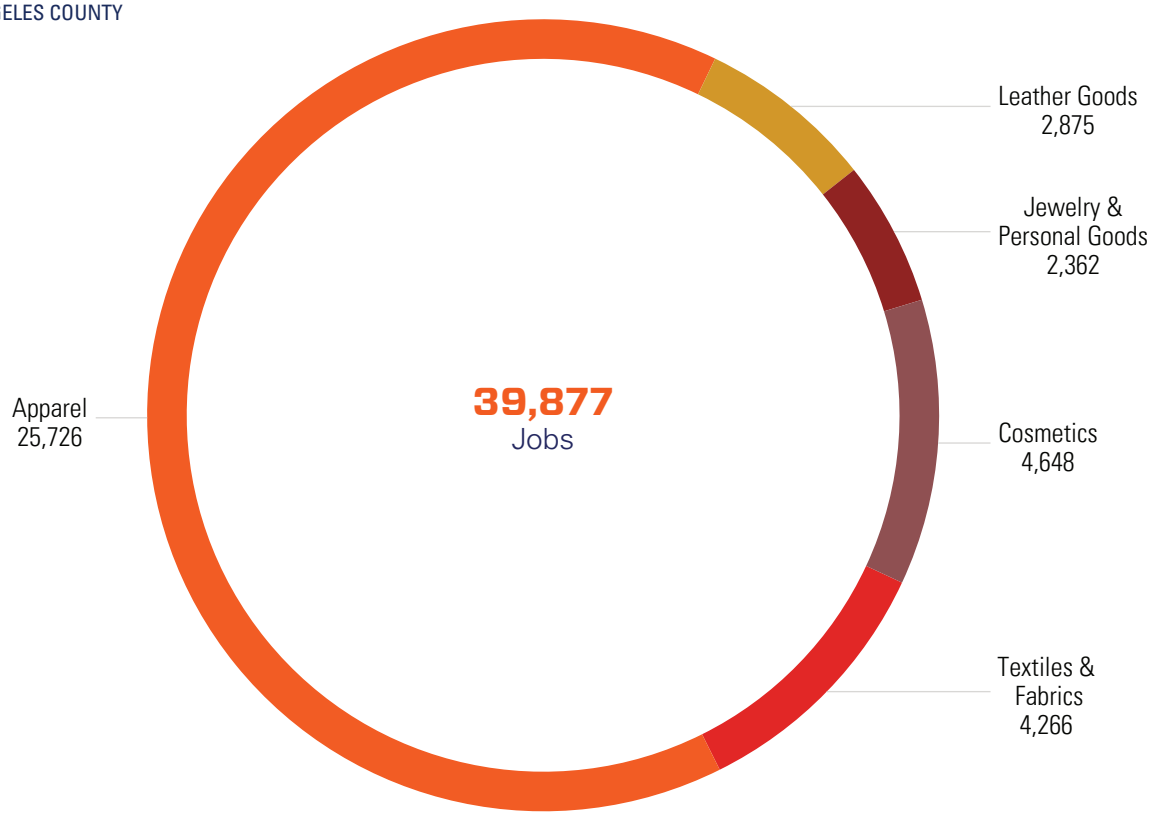
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.39: FASHION EMPLOYMENT SHARE BY SUBSECTOR
2021

(A) CALIFORNIA



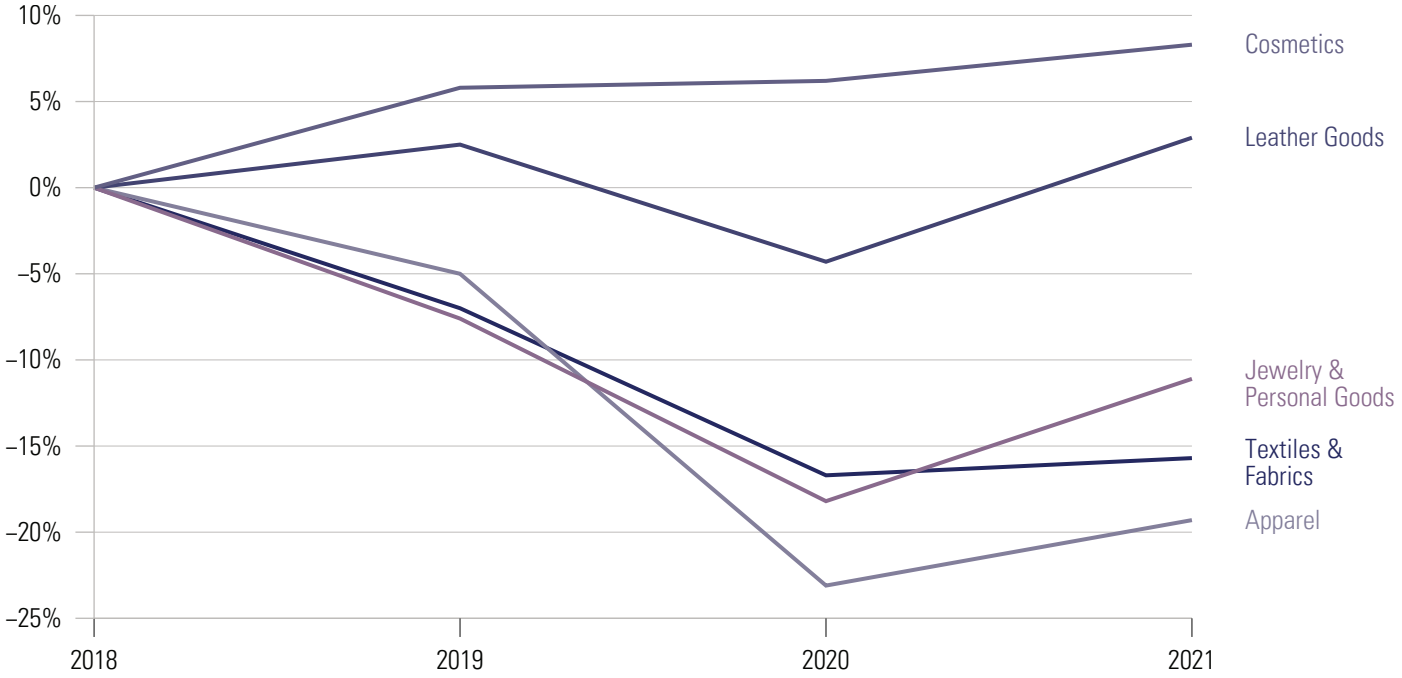
(B) LOS ANGELES COUNTY



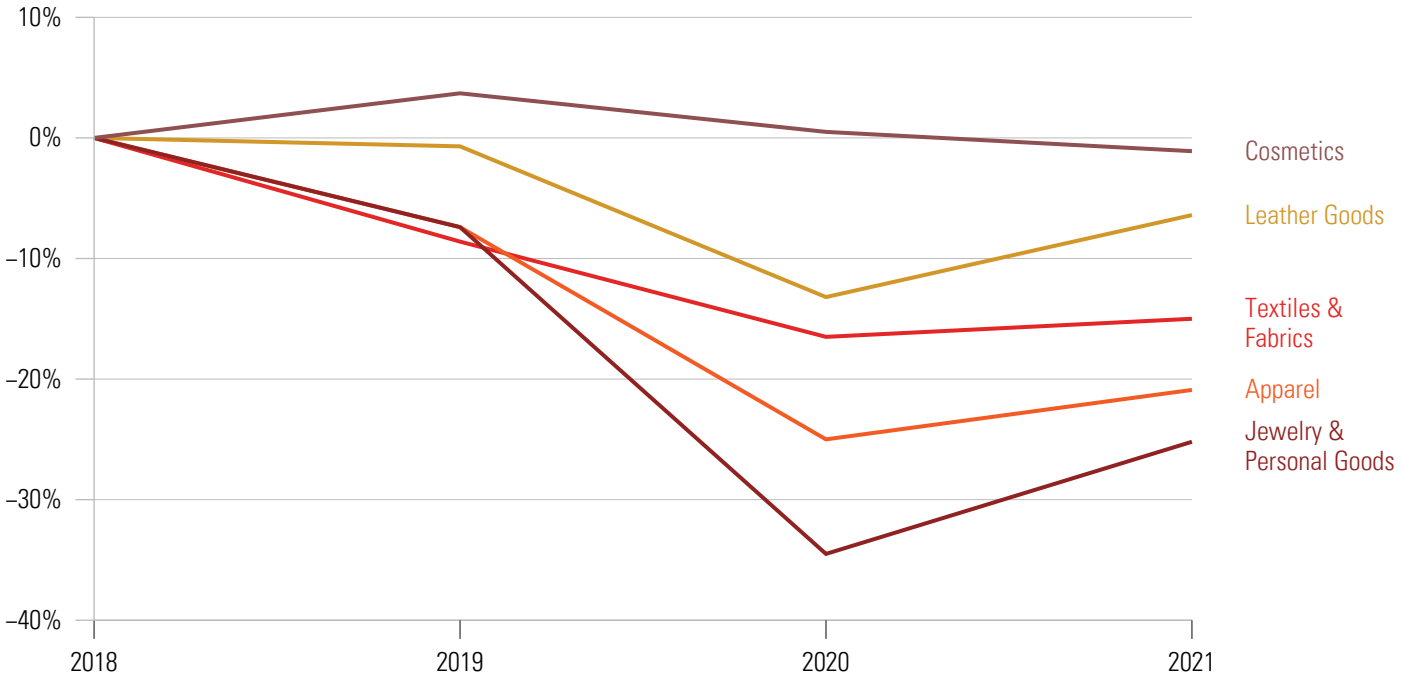
Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.40: FASHION EMPLOYMENT GROWTH BY SUBSECTOR
2018 to 2021

(A) CALIFORNIA

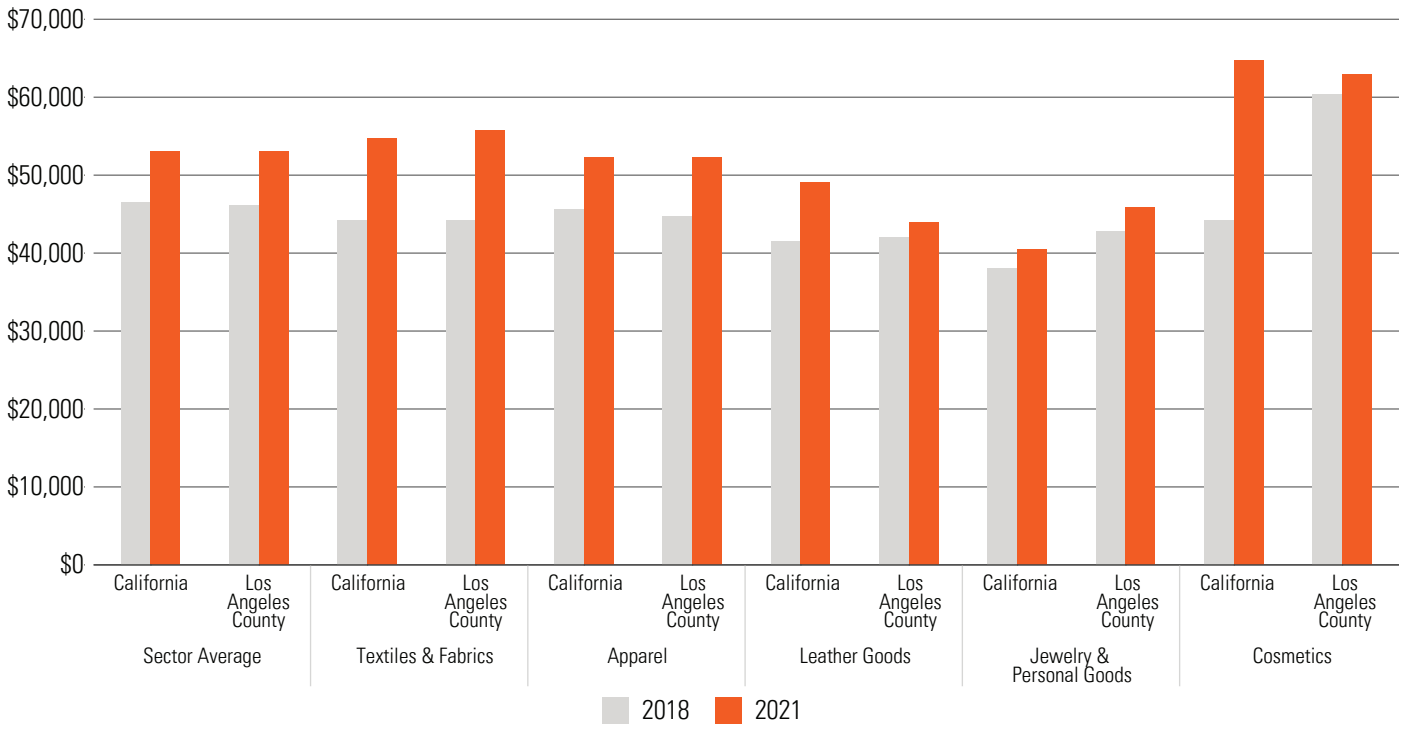


(B) LOS ANGELES COUNTY



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE 2.41: AVERAGE ANNUAL WAGES FOR FASHION BY SUBSECTOR
2018 to 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

TABLE 2.3: CALIFORNIA RUNWAY FASHION SHOWS 2021 TO 2023

LABEL	COLLECTION	SHOW DATE	LOCATION
Louis Vuitton	Resort 2022	May 2021	San Diego: Salk Institute for Biological Studies
Gucci	Fall 2022	Nov 2021	Los Angeles: TCL Chinese Theater
Dior x ERL	Spring 2023	May 2022	Los Angeles: Venice Beach
Ralph Lauren	Spring 2023	October 2022	Los Angeles: Huntington Library
Celine	Fall/Winter 2023	Dec 2022	Los Angeles: Wiltern Theater
Versace	Fall/Winter 2023	March 2023	Los Angeles: TBD

TECHNOLOGY SPOTLIGHT: FASHION

Fashion 3.0

The Fashion sector has been an early adopter of XR technology, often forging ahead into uncharted spaces where many industries fear to t(h)read. Design house Balenciaga, for example, debuted a fashion line through an online video game before anyone could view it "in real life."[52] Today, many designers are using VR and AR technology to create virtual fashion shows to showcase their collections in a fully immersive, interactive environment. This digital-first move has led to the rise of organizations like the Metaverse Fashion Council,[53] the announcement of partnerships[54] like the Parsons School of Design and Roblox,[55] and organizations like the British Fashion Council, which sponsored the first ever fashion award for metaverse design.[56] Virtual fashion allows designers to reach a global audience without the limitations of physical locations; in particular, the Parsons-Roblox partnership is focused on the design of hyper-realistic and inclusive 3D digital apparel that is agnostic of physical location.

The use of virtual avatars—allowing individuals to create and customize their own digital representations—has led to rapid growth in the development of digital clothing and accessories. This new market for fashion does not seem to be slowing down. In 2022 alone, 11.5 million creators designed more than 62 million clothing and accessory items on Roblox.[57] Platforms like DRESSX, which launched in 2020, have emerged for buying and selling both physical and digital clothes and accessories. By forming partnerships with tech giants like Meta, Roblox, Snapchat, Google, and Warner Music Group, these platforms grant designers the ability to create, market, and sell their own digital fashion items to a rapidly growing consumer base.[58] For traditional physical fashion design and manufacturing processes, XR has streamlined the production process for many firms. Hugo Boss estimates it has reduced the number of physical samples for each of its collections by 30%.[59] In this sense, the trend towards increased hybridization of the real and virtual worlds is very much in fashion.

[52] Friedman, Vanessa. "After Grand Theft Auto and Minecraft, Balenciaga: The Video Game?" New York Times. December 7, 2020. Retrieved from: https://www.nytimes.com/2020/12/07/style/balenciaga-video-game-afterworld.html.

[53] "Metaverse Fashion Council." Accessed January 22, 2023. Retrieved from: https://metaversefashioncouncil.org.

[54] Roblox is a multiplayer online game platform and game creation system that allows users to design their own games and play a wide variety of games created by other users. The platform is designed for users of all ages and skill levels and allows users to create and share their own games using a simplified version of the Lua programming language.

[55] Spielman, Samantha. "The New School's Parsons School of Design and Roblox Partner to Educate on Digital Fashion Design and Trends." Roblox. November 1, 2022. Retrieved from: https://corp.roblox.com/2022/11/01/the-new-schools-parsons-school-of-design-and-roblox-partner-to-educate-on-digital-fashion-design-and-trends%ef%bf%bc/.

[56] "British Fashion Council Launches the Fashion Awards Experience on Roblox and the First Ever Fashion Award for Metaverse Design." November 29, 2021. Retrieved from: https://www.businesswire.com/news/home/20211129005246/en/%C2%A0British-Fashion-Council-Launches-the-Fashion-Awards-Experience-on-Roblox-and-the-First-Ever-Fashion-Award-for-Metaverse-Design.

[57] Roblox Blog. "2022 Metaverse Fashion Trends Report." Roblox and Parsons School of Design. Retrieved from: https://blog.roblox.com/wp-content/uploads/2022/10/FINAL_2022-Metaverse-Fashion-Trends-report_Roblox-x-Parsons.pdf.

[58] Warner Music Group Corp, "Warner Music Group announces partnership with, and investment in, leading digital fashion company DRESSX." December 15, 2022. https://www.prnewswire.com/news-releases/warner-music-group-announces-partnership-with-and-investment-in-leading-digital-fashion-company-dressx-301703956.html.

[59] Adobe Experience Cloud. "Hugo Boss Fosters Creativity at Speed with Adobe Substance." Accessed January 22, 2023. Retrieved from: https://business.adobe.com/customer-success-stories/hugo-boss-case-study.

PART 3:

RECOMMENDATIONS

The economic value of the creative industries extends beyond the production of creative and cultural goods. The value even extends beyond the employment of creative people. When we think about the need to cultivate California's arts, culture, and creative economy, we often point to benefits beyond economic growth like better health outcomes, improved wellbeing, and social cohesion. The world in which the creative economy exists is rapidly evolving, and our ability to adapt will determine whether we're able to achieve the goals we set for ourselves.

Technology and the continued rise of digital culture will have a profound impact on the creative economy over the next decade. The pandemic introduced structural changes to the economy, such as the mainstreaming of "digital-first" commerce and remote work, that continue to stick. We've found ourselves in an environment where the way creative goods and services are consumed, developed, distributed, and monetized is evolving at an unprecedented rate. Crafting a robust set of policies to respond to and to shape this shifting landscape will not only foster a stronger economy, but also allow California's residents and communities to capitalize on the resulting opportunities and benefits.

Making the State Competitive in the Changing Landscape

California's tax code and regulatory levers are powerful tools that can influence the behavior of businesses and encourage development. The state must reexamine its use of these tools to make sure the creative sectors can remain competitive, promote a diverse workforce, and sustain job growth.

1. **THE STATE MUST BENCHMARK POLICIES AND TAX INCENTIVES AGAINST OTHER JURISDICTIONS TO ENSURE THE SUPPORT OF INNOVATION, GROWTH, AND INTERNATIONAL COMPETITIVENESS FOR THE CREATIVE SECTORS.**

   In a global market where expenditures on screen production have reached unprecedented levels, governments recognize that incentives can attract high-value inward investment, strengthen local production sectors, and build infrastructure for emerging industries. The visual effects industry, which will continue to have significant impacts on filmmaking and entertainment, is a case in point. Visual effects tools and workflows are making production across platforms (film, games, immersive experiences, and other forms of art and multimedia) a reality. Yet over the past two decades, large swaths of visual effects talent and infrastructure have migrated out of California.

   Rising costs at home are partly to blame, to be sure, but there are compelling pull factors at play as well. New York State recently launched its $25 Million Digital Game Development Tax Credit Program.[60] India has announced a Visual Effects, Gaming, Comics, and Extended Reality (AVGC-XR) growth plan over the next eight years to create nearly 2 million jobs.[61] And several countries are currently offering incentives at remarkably high rates: up to 25% in the United Kingdom; up to 30% in France; up to 40% in Greece; and, in Canada, up to 40% in Ontario and up to 30% in Quebec.[62]

   We are in a moment where the market is fusing creativity, art, and technology through cutting-edge techniques to bring a new world of products to market. Technological advances mean that there will be an ever-increasing crossover of skills within and across the creative sectors. Yet there continue to be difficulties in securing access to the talent required to support industry growth.

2. **REDUCE BARRIERS TO ACCESSING, BUILDING, AND EXPANDING APPRENTICESHIP OPPORTUNITIES FOR CREATIVE SECTOR JOBS.**

   The state has prioritized the expansion of apprenticeship programs to historically non-traditional sectors, but we are still in the early stages of the process. Of the 88,237 total apprentices in the state, only 19.2% (17,006) are in non-traditional trades.[63] Only last year did California see one of its first apprenticeship programs in visual effects, gaming, and animation launch.[64]

   For most small- and mid-size enterprises, the current regulatory framework isn't sustainable as currently structured. From a business perspective, hiring an apprentice does not provide the same kind of value proposition as a fully qualified candidate on the open market, yet the cost structure and tax responsibilities—including but not limited to federal income tax, state income tax, social security, health care, and state disability insurance—are often indistinguishable. For many creative sector employers, the costs of training and mentoring an apprentice simply don't pencil out. A more thoughtful approach to nurturing talent through apprenticeship programs while easing the burden on participating firms is needed.

[60] "Governor Hochul Announces Applications for New York State's First Ever $25 Million Digital Game Development Tax Credit Program Now Open | Governor Kathy Hochul." November 4, 2022. Retrieved from: https://www.governor.ny.gov/news/governor-hochul-announces-applications-new-york-states-first-ever-25-million-digital-game.

[61] Lang, Jamie. "India's Government Is Backing An Ambitious Growth Plan For Animation, VFX, And Video Games." Cartoon Brew. December 29, 2022. Retrieved from: https://www.cartoonbrew.com/videogames/india-animation-visual-effects-gaming-investment-224503.html.

[62] Written evidence from UK Interactive Entertainment Association. House of Lords Communications and Digital Committee inquiry "A creative future." Retrieved from: https://committees.parliament.uk/writtenevidence/111077/html/.

[63] Department of Industrial Relations. Division of Apprenticeship Standards, Quarterly Report. July 7, 2022. Retrieved from: https://www.dir.ca.gov/das/DAS_MeetingAgenda/2022/July/Chiefs-Report.pdf.

[64] White, Abbey. "BRIC Foundation Launches Animation, Visual Effects and Gaming Apprenticeship (Exclusive)." The Hollywood Reporter (blog). December 7, 2022. Retrieved from: https://www.hollywoodreporter.com/business/digital/bric-foundation-animation-visual-effects-gaming-apprenticeship-1235276717/.

3. IMPROVE THE QUALITY OF JOBS AND SKILLS DATA AND MAKE THIS INFORMATION MORE ACCESSIBLE TO POLICYMAKERS AND THE PUBLIC.

Private sector businesses, nonprofits, and even public sector entities that operate in the creative economy are suffering from the same skills and labor shortages afflicting the broader economy. The pace of technological advancement and shifts in consumer preferences contribute to the demand of evermore sophisticated skill sets, which in turn fuels the dynamic nature of today's labor market. Yet incomplete and/or inconsistent data regarding skills shortages has led to a widening gulf between the kinds of skills needed in the creative sectors and the kinds of skills taught at educational institutions and in workforce development training programs. Steps need to be taken to standardize data collection, analysis, and dissemination at the statewide level on a periodic basis.

4. POLICYMAKERS SHOULD SUPPORT THE CREATION OF A DIGITAL RESEARCH AND DEVELOPMENT FUND FOR THE ARTS TO SUPPORT COLLABORATIVE PROJECTS THAT EMPLOY EMERGING DIGITAL TECHNOLOGIES.

The establishment of a cross-sector research and development capacity for the creative economy may have been considered unwieldy or impractical at one point. However, the creative sectors are going to be the incubators for cultural and economic value in the coming decades. To that end, the state should encourage and enable sectors like Fine & Performing Arts to experiment with advanced and emerging technologies. Indeed, funding research and development in this area is essential to ensuring the sector grows and remains accessible to as many Californians as possible.

Such a fund would allow for the development of prototypes for immersive content using virtual, augmented, and mixed reality technologies. The opportunity to support artists and creators in these realms could be codified, with findings and best practices shared with the wider sector. The innovation of engagement options for audiences would have a positive impact on those in the state who lack meaningful access to arts and cultural experiences, especially in disabled communities, older Californians, and individuals leaving major urban centers.

But the greater benefit may be for the smaller fine and performing arts companies, which continue to face serious challenges three years after the onset of Covid-19. Investment in developing digital production, distribution, and engagement capabilities to supplement existing business models would increase resilience and help the sector adapt to a digital environment that will only grow more complex, sophisticated, and essential each subsequent year.

TECHNOLOGY SPOTLIGHT: VFX TAX CREDITS

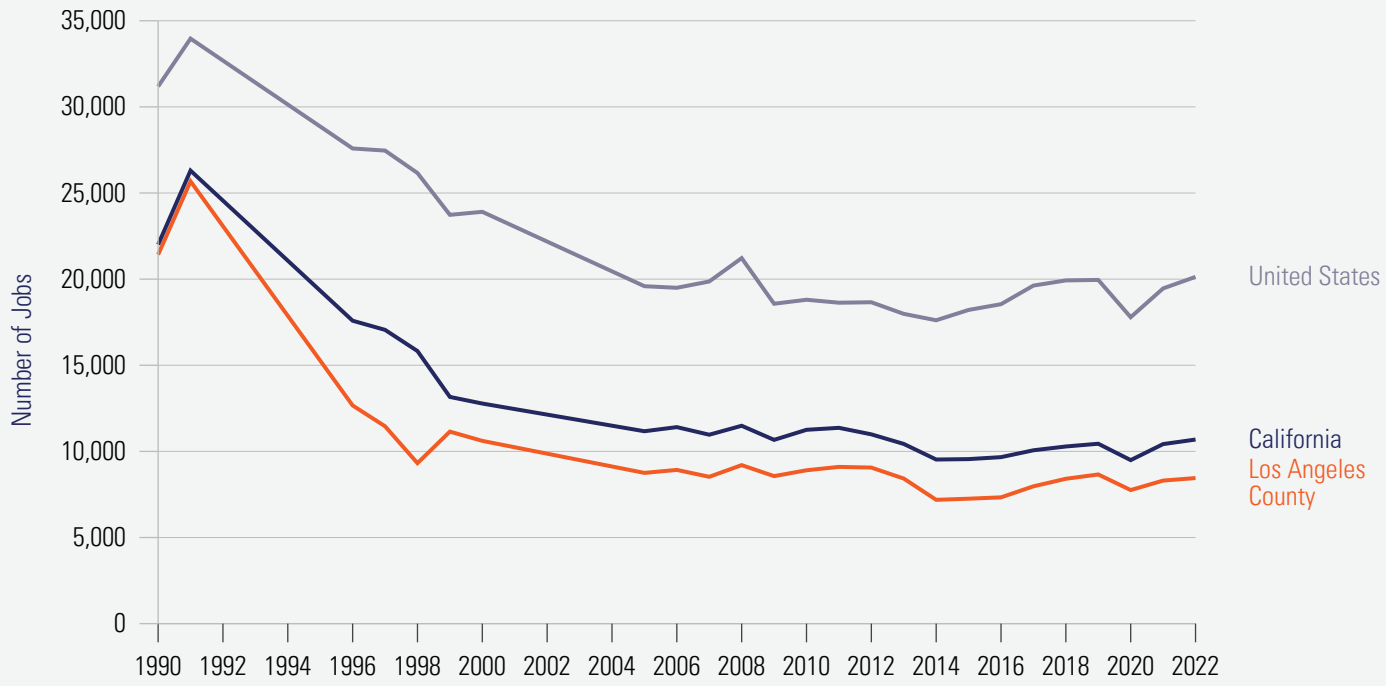
VFX Technology Is Outpacing California Policy

Film and television production in Canada ebbed and flowed during the 1970s and 1980s, but the industry was propelled forward after the introduction of incentives by the Canadian government in the 1990s[65] —most notability in post-production and visual effects. By contrast, the concentration of post-production VFX employment has declined by an estimated 50% in California over the past three decades. In 1990, there were an estimated 22,000 post-production and VFX jobs in the state; by the end of the 1990s, roughly half (12,780) remained. Nearly all those jobs were lost in Los Angeles County, which had 21,000 in 1990 and only 10,600 in 2000. The collapse in employment has failed to rebound in the last decade despite two key trends: (1) the skyrocketing increase of content being produced on streaming services, and (2) the expanding share of production budgets for visual effects of total project costs across the industry.

Today, California finds itself as the only major film and television production center that lacks a stand-alone VFX credit. The majority of VFX work is performed outside of California, assigned to businesses that reside in jurisdictions that provide incentives without the requirement of filming the project within their borders. There are an estimated 23 states in the U.S.

[65] The Canadian Film or Video Production Tax Credit (CPTC) was introduced in 1995 and the Film or Video Production Services Tax Credit (PSTC) was introduced in 1997 by the Department of Canadian Heritage. The PSTC is combined with various providential incentives today.

FIGURE 3.1: POST-PRODUCTION SERVICES EMPLOYMENT
1990 to 2022



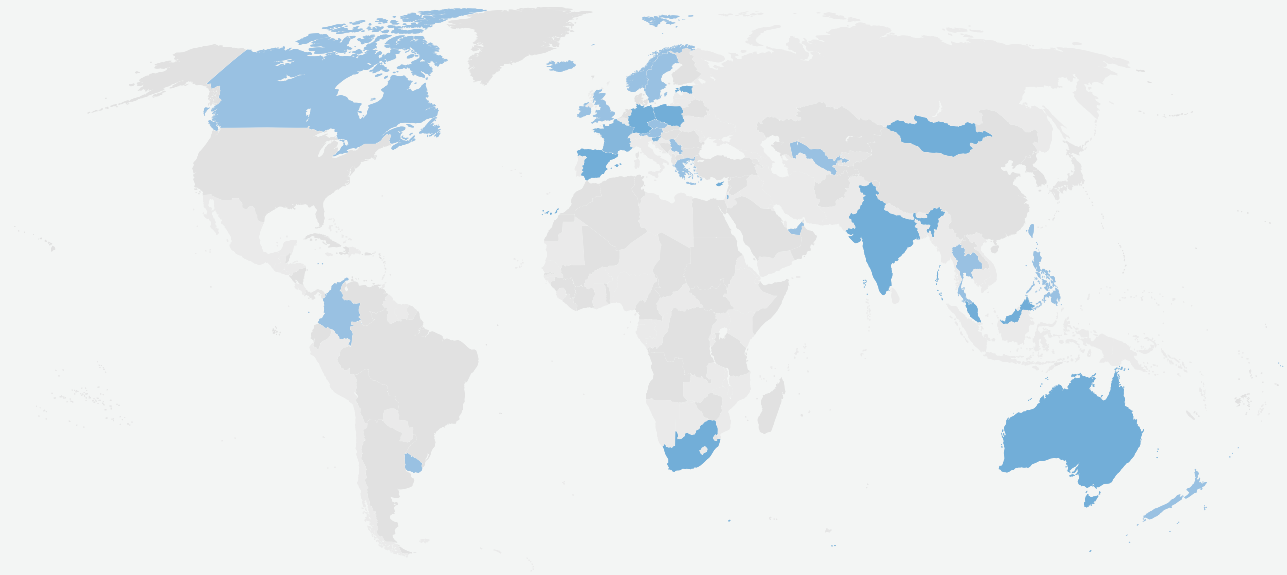
Note: Chart depicts payroll employment for NAICS Code 51219: Postproduction Services and Other Motion Picture and Video Industries

Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages

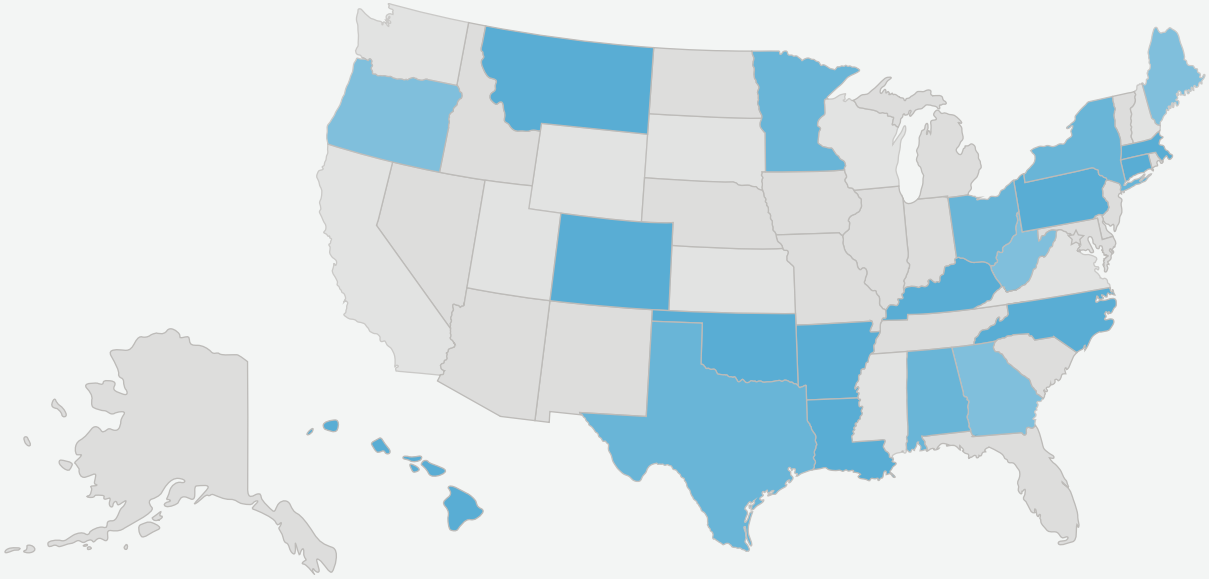
and several countries around the world—including France, Germany, the U.K., Israel, and India—that are currently supporting the development of VFX industry activity. The aggressive push to incubate and support evolving forms of digital creativity outside the state should alarm California's policymakers given the highly mobile nature of creative work.

FIGURE 3.2: VISUAL EFFECTS AND POST-PRODUCTION INCENTIVES

(A) BY COUNTRY



(B) BY STATE



Note: Maps depict geographies with a standalone incentive for visual effects work. This data is presented for informational purposes only. Although every effort has been made to reflect current conditions, laws, and incentives in a given jurisdiction, they may have been revised since this report was published.

Source: Entertainment Partners (EP); CVL Economics

BOOK 2:

REGIONAL PROFILES

REGIONAL PROFILES

The creative economy has a significant footprint in each of California's eight regions. Despite the pandemic's adverse effects on regional economies, the concentration of workers employed in a given region's creative sectors remained relatively unchanged between 2018 and 2021, only decreasing about 0.2% to 0.5% in most regions. The region with the lowest concentration of creative economy workers in 2021 was the Central Valley at 2% of total regional employment. In contrast, the Bay Area, where the share of jobs in the creative economy actually increased over the four-year span, had the highest concentration of workers in the creative economy at nearly 12% of total employment. Southern California had the largest number of creative economy workers in absolute terms out of all the regions, accounting for 9% of total employment in Los Angeles and Orange Counties.

Still, the state did experience significant job losses in the wake of the 2020 recession, with some sectors and regions more adversely affected than others. For instance, the Entertainment sector—which is the largest or second-largest sector in all the regions—only grew in the Bay Area and Southern California between 2018 and 2021, where it had the strongest presence. Contraction in entertainment employment elsewhere caused overall employment in regional creative economies to fall as well. In contrast, Architecture & Related Services proved most resilient, with employment growing in every region. Similarly, the Fashion sector expanded in every region except Southern California and the Inland Empire. On the other hand, mirroring statewide trends, Fine & Performing Arts was the hardest hit creative sector, declining in every region except for the Central Valley.

Although creative economy employment fared worse than the economy overall in most regions, wage growth trends tell a different story. In most regions, the creative economy paid more on average in 2021 than the regional economy overall. This wage premium was most pronounced in the Bay Area, where the workers in the creative sectors earned more than twice the regional average annual wage. Furthermore, in most regions—the Bay Area, the Central Valley, the Central Coast, Southern California, the Inland Empire, and the Southern Border Region—the creative economy experienced greater wage growth than the economy overall between 2018 and 2021.

OVERVIEW OF CALIFORNIA'S CREATIVE ECONOMY BY REGION
2021

REGION 1: NORTHERN CALIFORNIA

Butte, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Plumas, Shasta, Sierra, Sisikyou, Sutter, Tehama, Trinity, and Yuba

Creative Economy Employment: **12,498**
Share of Regional Employment: **2.4%**

Creative Economy Average Annual Wages: **$39,471**
Regional Average Annual Wages: **$47,438**
Wage Premium: **0.83**

REGION 3: BAY AREA

Alameda, Contra Costa, Marin, Napa, San Benito, San Francisco, San Joaquin, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma

Creative Economy Employment: **650,733**
Share of Regional Employment: **11.5%**

Creative Economy Average Annual Wages: **$243,828**
Regional Average Annual Wages: **$109,673**
Wage Premium: **2.22**

REGION 5: CENTRAL COAST

Monterey, San Luis Obispo, Santa Barbara, and Ventura

Creative Economy Employment: **58,544**
Share of Regional Employment: **5.1%**

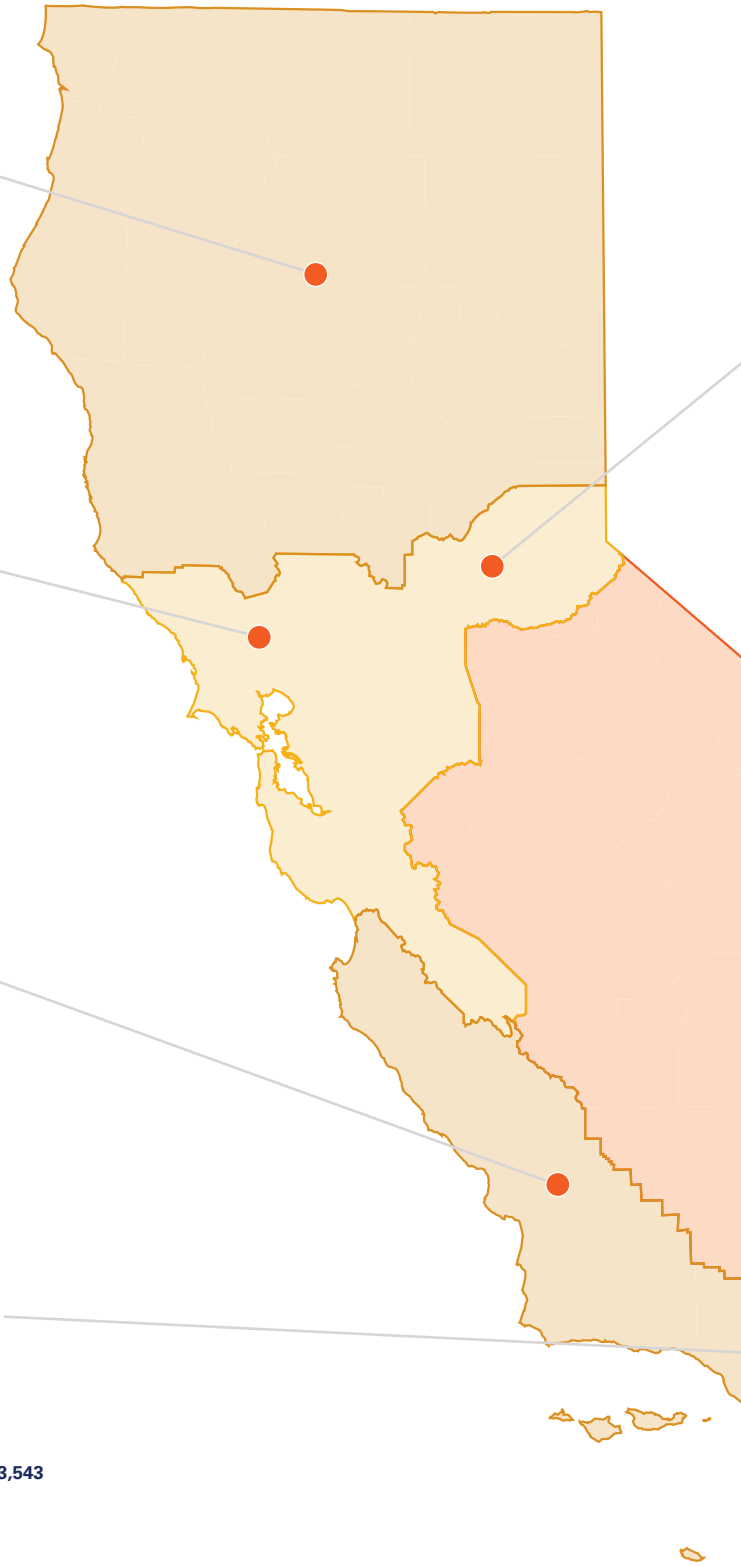
Creative Economy Average Annual Wages: **$74,332**
Regional Average Annual Wages: **$55,620**
Wage Premium: **1.32**

REGION 6: SOUTHERN CALIFORNIA

Los Angeles, Orange

Creative Economy Employment: **754,633**
Share of Regional Employment: **9.0%**

Creative Economy Average Annual Wages: **$103,543**
Regional Average Annual Wages: **$65,213**
Wage Premium: **1.59**



Source: U.S. Bureau of Labor Statistics Quarterly Census of Employment and Wages; U.S. Census American Community Survey 5-Year Estimates 5-Year Estimates

REGION 2: CAPITAL REGION

El Dorado, Nevada, Placer, Sacramento, and Yolo

Creative Economy Employment: **60,177**
Share of Regional Employment: **4.3%**

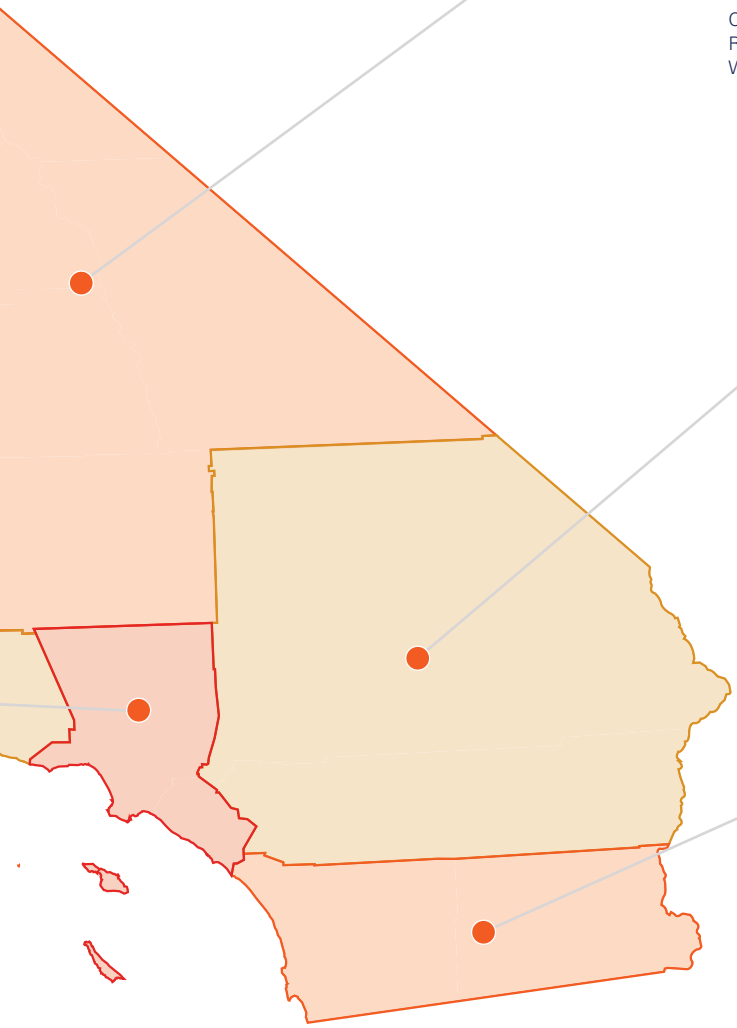
Creative Economy Average Annual Wages: **$69,280**
Regional Average Annual Wages: **$61,472**
Wage Premium: **1.13**

REGION 4: CENTRAL VALLEY

Alpine, Amador, Calaveras, Fresno, Inyo, Kern, Kings, Madera, Mariposa, Merced, Mono, Stanislaus, Tulare, and Tuolumne

Creative Economy Employment: **34,231**
Share of Regional Employment: **2.0%**

Creative Economy Average Annual Wages: **$49,955**
Regional Average Annual Wages: **$49,094**
Wage Premium: **1.02**



REGION 7: INLAND EMPIRE

Riverside, San Bernardino

Creative Economy Employment: **61,934**
Share of Regional Employment: **2.9%**

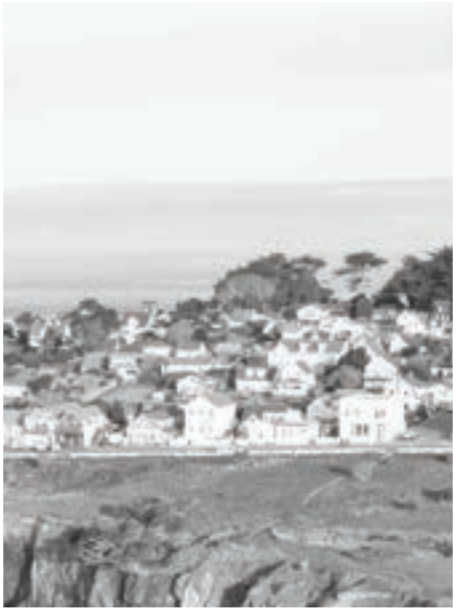
Creative Economy Average Annual Wages: **$47,785**
Regional Average Annual Wages: **$49,465**
Wage Premium: **0.97**

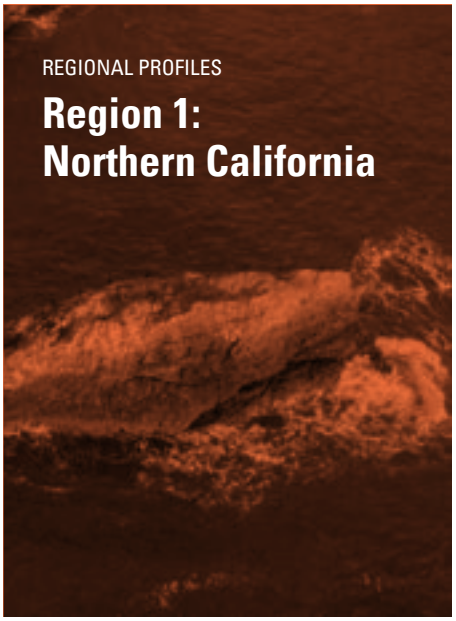
REGION 8: SOUTHERN BORDER REGION

San Diego, Imperial

Creative Economy Employment: **124,274**
Share of Regional Employment: **5.8%**

Creative Economy Average Annual Wages: **$83,021**
Regional Average Annual Wages: **$64,415**
Wage Premium: **1.29**





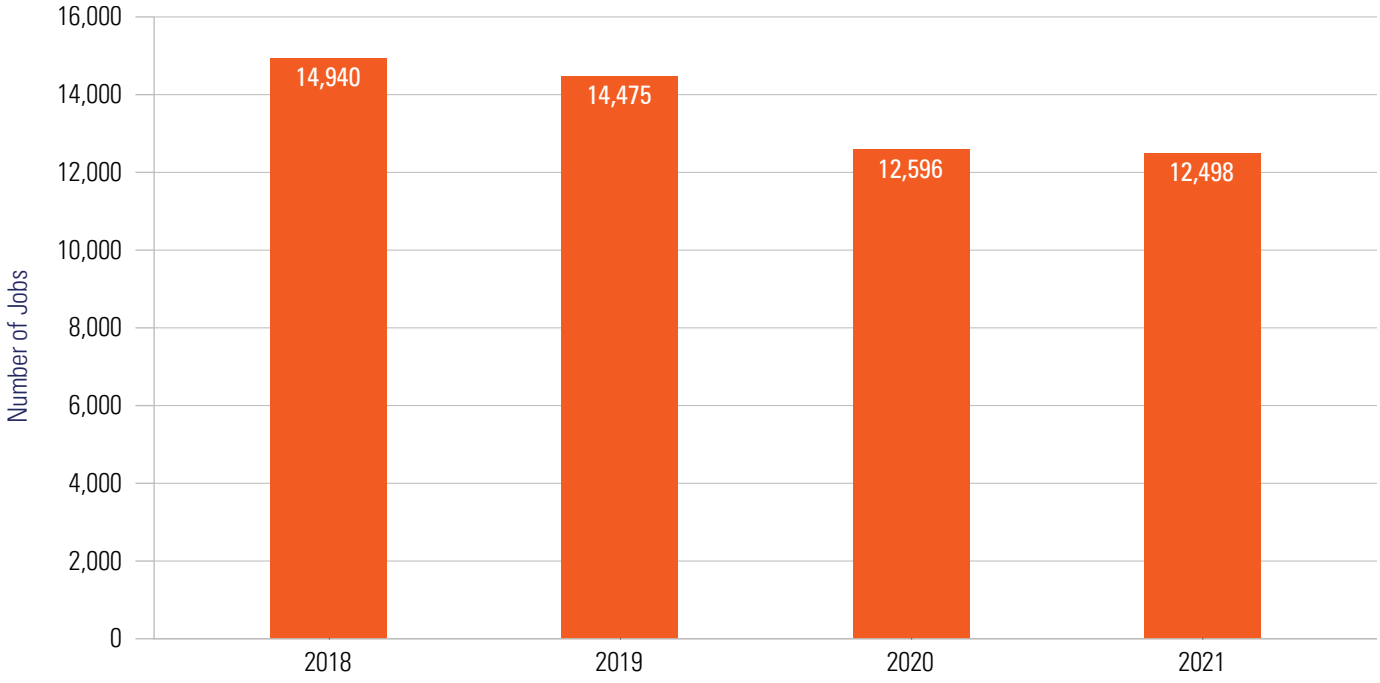
REGIONAL PROFILES

Region 1: Northern California

Northern California suffered a 16% drop in creative economy employment relative to pre-pandemic (2018) levels, the largest decline of the eight regions in 2021. Between 2018 and 2021, most job losses occurred in 2020 as a result of the pandemic, when the region lost 13% of creative economy jobs. While the region's overall economy experienced growth between 2020 and 2021 (+2%), its creative economy continued to decline (-1%).

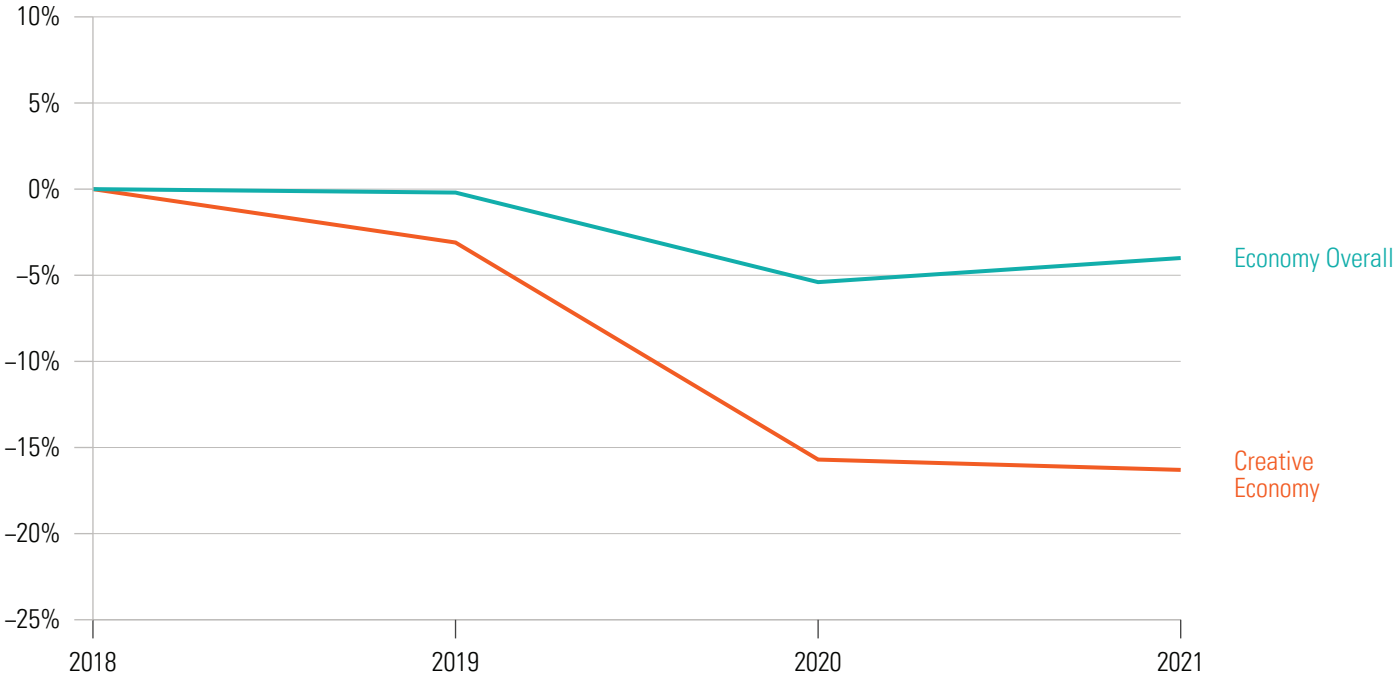
The largest employer in Northern California's creative economy is the Entertainment sector, which accounts for nearly 40% of the creative economy's 12,498 total jobs. Fine & Performing Arts is the second-largest sector, accounting for 30% of creative economy jobs. Both sectors were the hardest hit by the pandemic, with employment at about 20% below 2018 levels each. On the contrary, Fashion was the only sector to experience employment gains in this period, with 36% more jobs in 2021 compared to 2018.

FIGURE R1.1: CREATIVE ECONOMY EMPLOYMENT IN NORTHERN CALIFORNIA
2018 to 2021



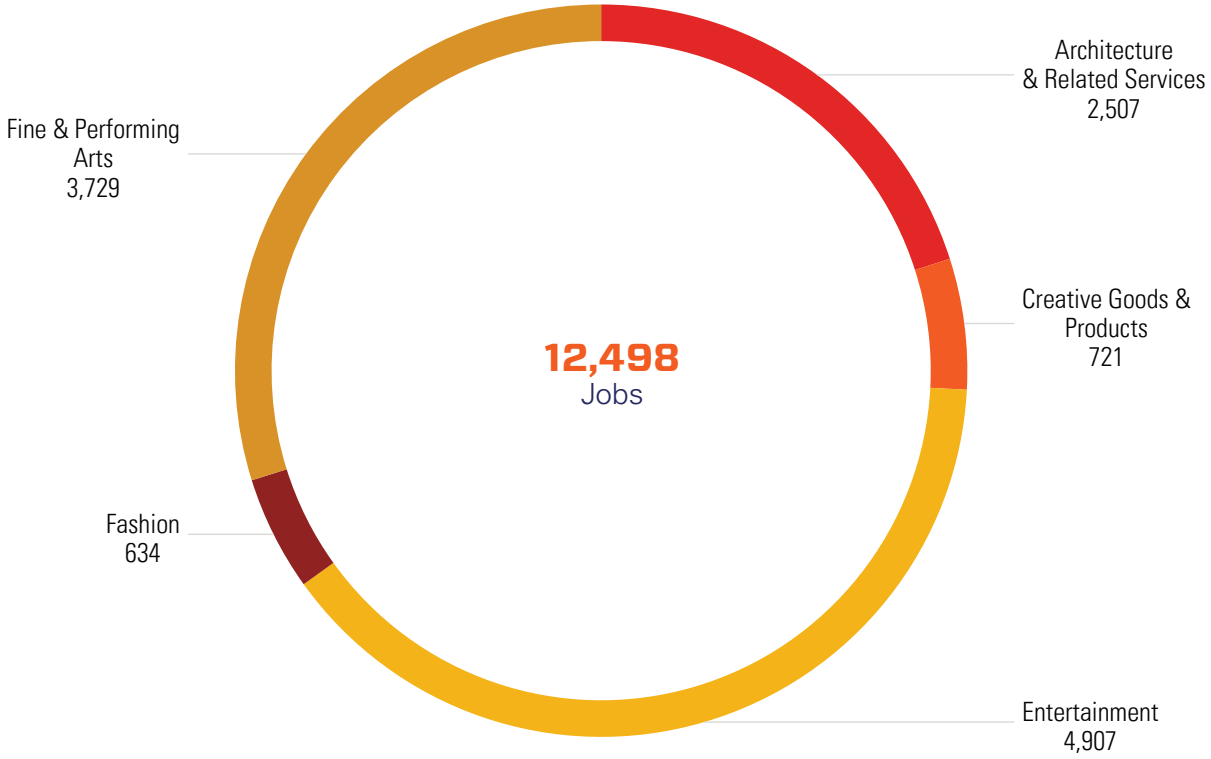
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R1.2: CREATIVE ECONOMY EMPLOYMENT GROWTH IN NORTHERN CALIFORNIA
2018 to 2021



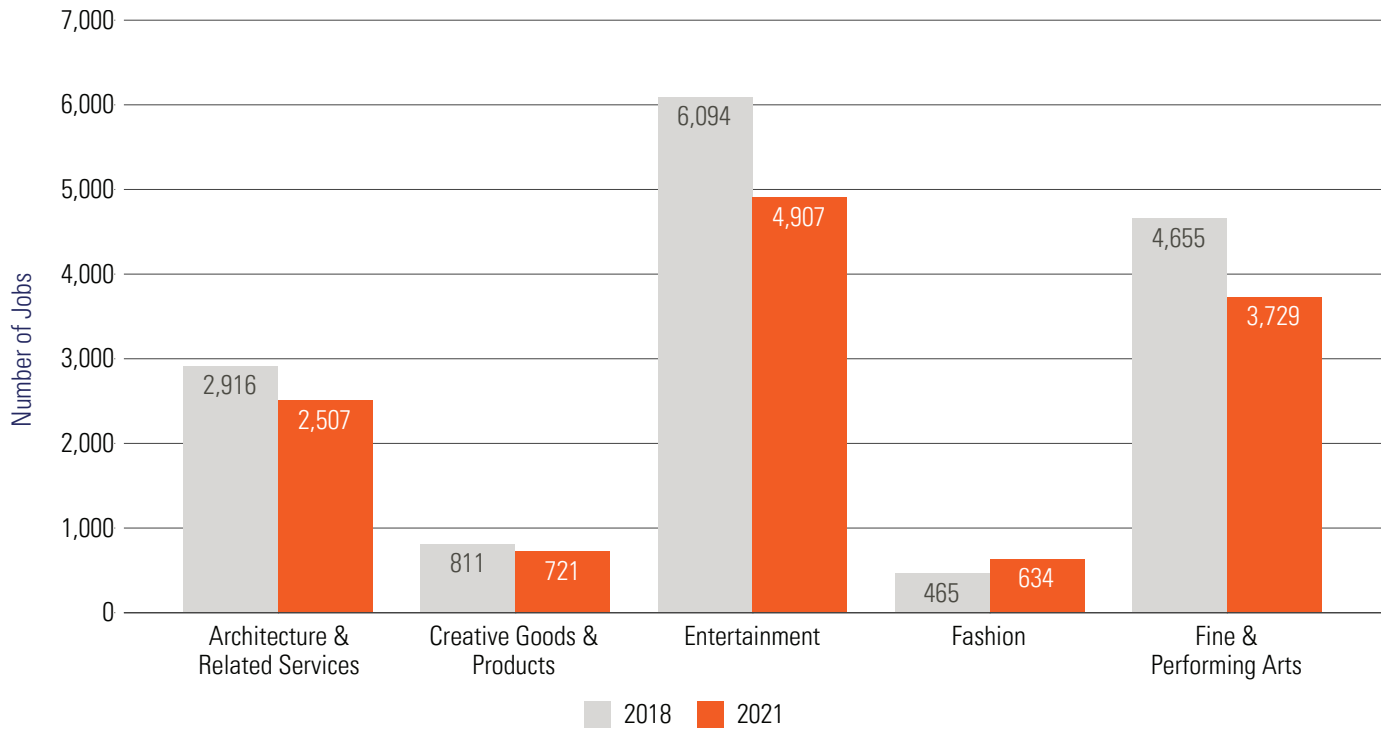
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R1.3: CREATIVE ECONOMY EMPLOYMENT SHARE BY CREATIVE SECTOR IN NORTHERN CALIFORNIA
2021



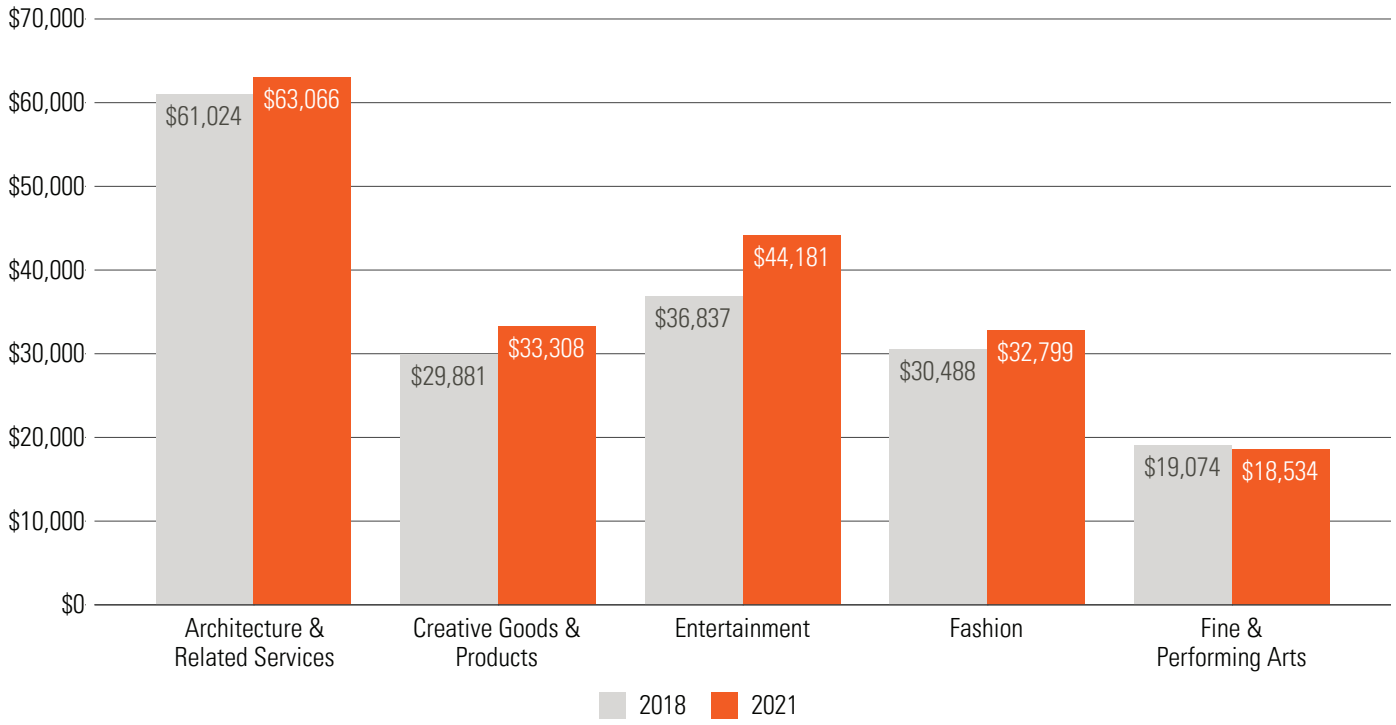
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R1.4: CREATIVE ECONOMY EMPLOYMENT BY CREATIVE SECTOR IN NORTHERN CALIFORNIA
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R1.5: ANNUAL WAGES BY CREATIVE SECTOR IN NORTHERN CALIFORNIA
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

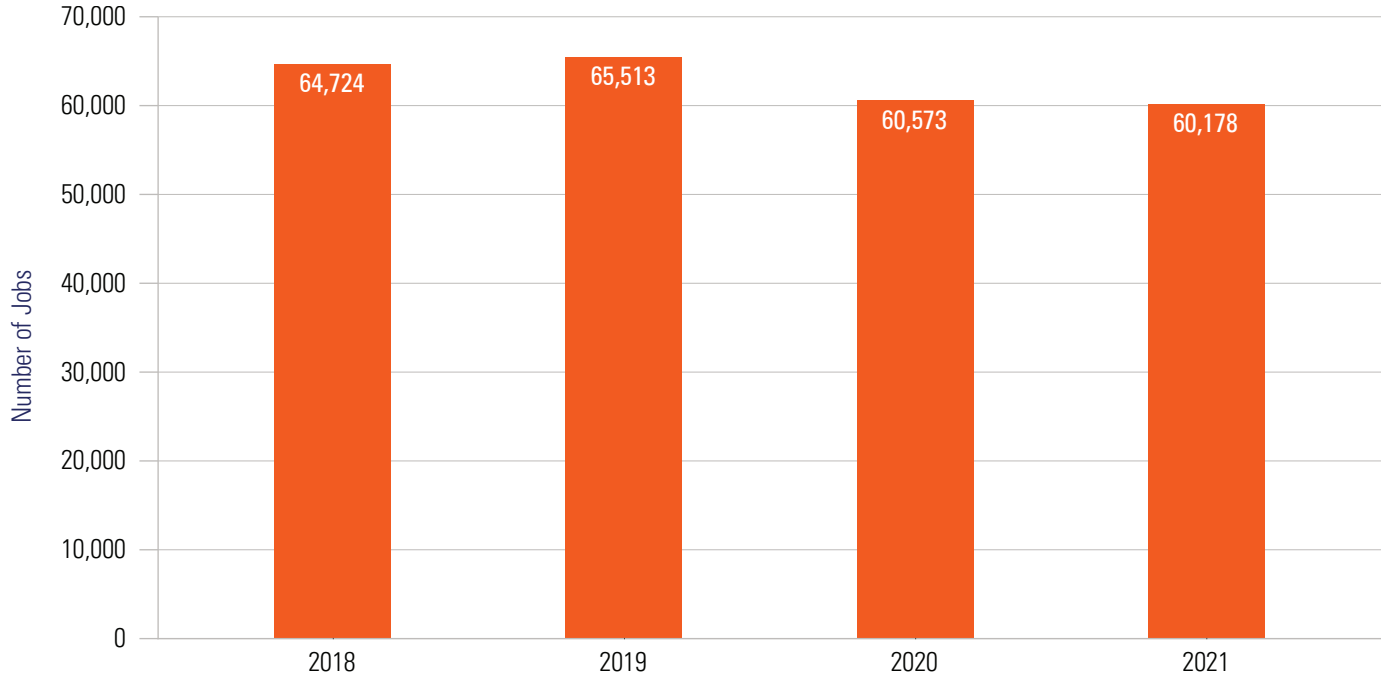
REGIONAL PROFILES

Region 2: The Capital Region

While the creative economy in the Capital Region experienced an employment boost in 2019, the pandemic substantially set back this progress. Between 2019 and 2020, the creative economy lost 8% of jobs, and declined an additional 1% between 2020 and 2021. By contrast, the region's economy overall is making its way out of the pandemic slump, recovering nearly all the jobs lost during the pandemic.

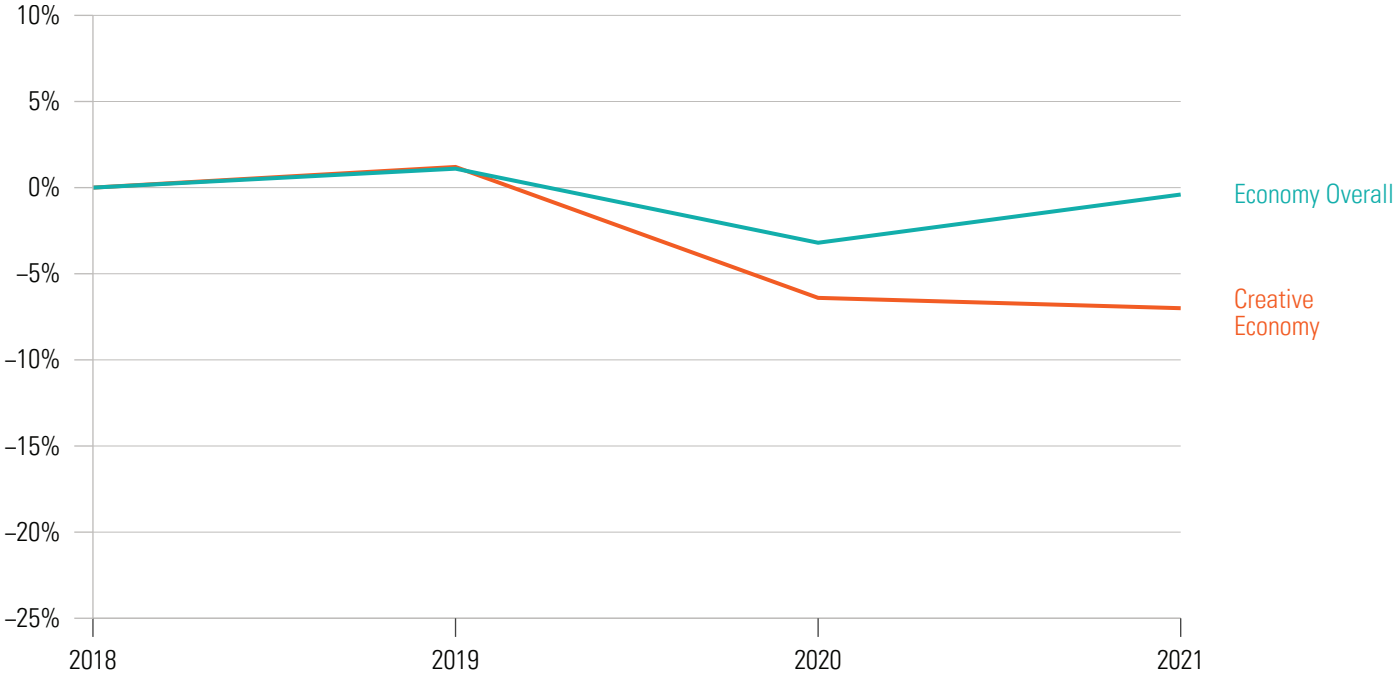
Like in other regions, Entertainment and Fine & Performing Arts are the largest sectors in the Capital Region's creative economy, accounting for 52% and 19% of creative economy jobs, respectively. The sectors that experienced the largest declines in employment between 2018 and 2021 are Fine & Performing Arts (-18%) and Creative Goods & Products (-16%). By comparison, Architecture & Related Services has recovered all the jobs lost since the pandemic, and employment in Creative Goods & Products sits 5.4% above 2018 levels. Wages for this sector are far below the regional economy average ($61,472) and have not experienced as much growth as other creative sectors, increasing by nearly 6% between 2018 and 2021. On the other hand, wages for Entertainment and Architecture & Related Services—which are the highest paying creative sectors—increased 15% and 10%, respectively.

FIGURE R2.1: CREATIVE ECONOMY EMPLOYMENT IN THE CAPITAL REGION
2018 to 2021



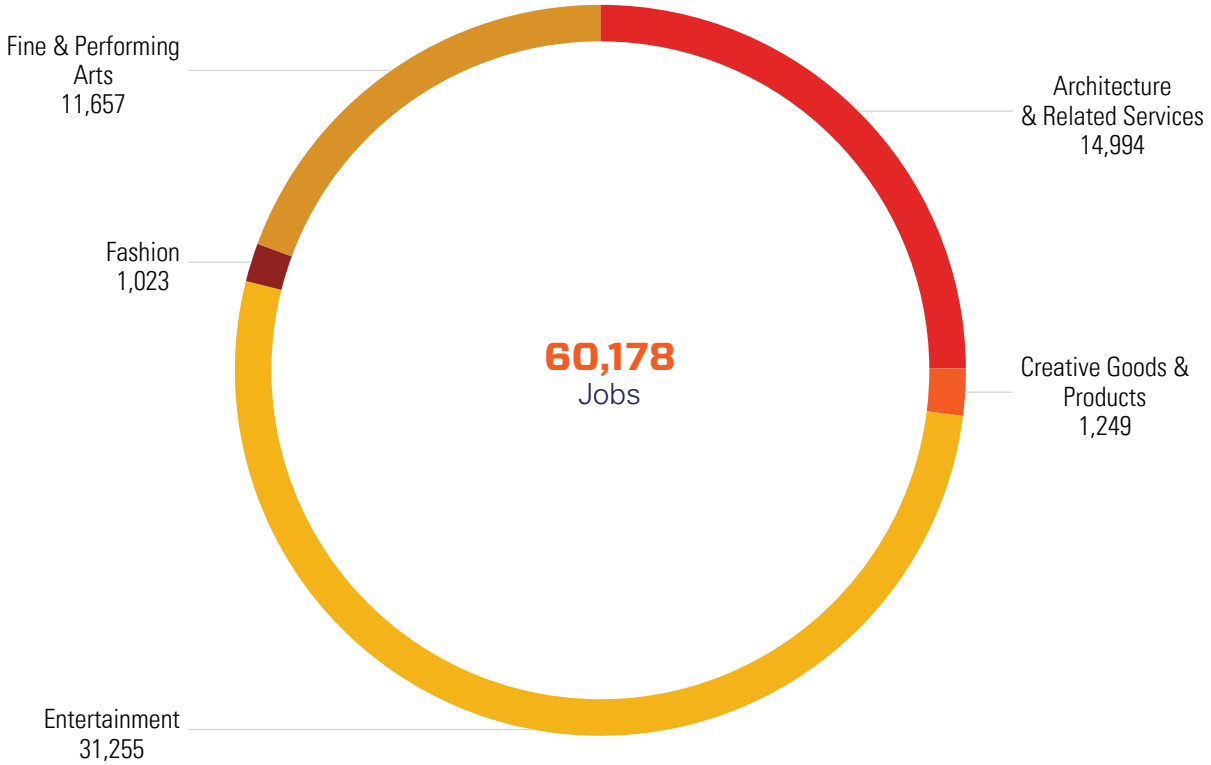
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R2.2: CREATIVE ECONOMY EMPLOYMENT GROWTH IN THE CAPITAL REGION
2018 to 2021



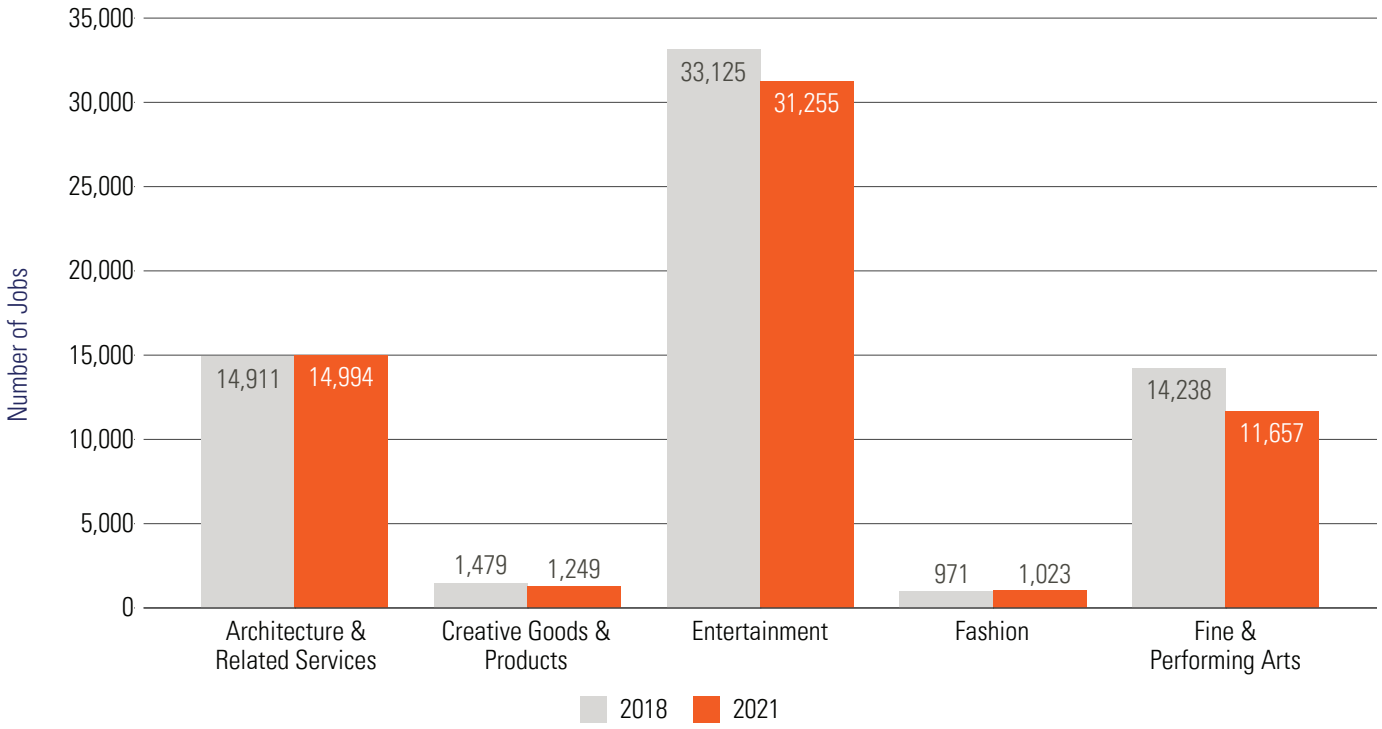
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R2.3: CREATIVE ECONOMY EMPLOYMENT SHARE BY CREATIVE SECTOR IN THE CAPITAL REGION
2021



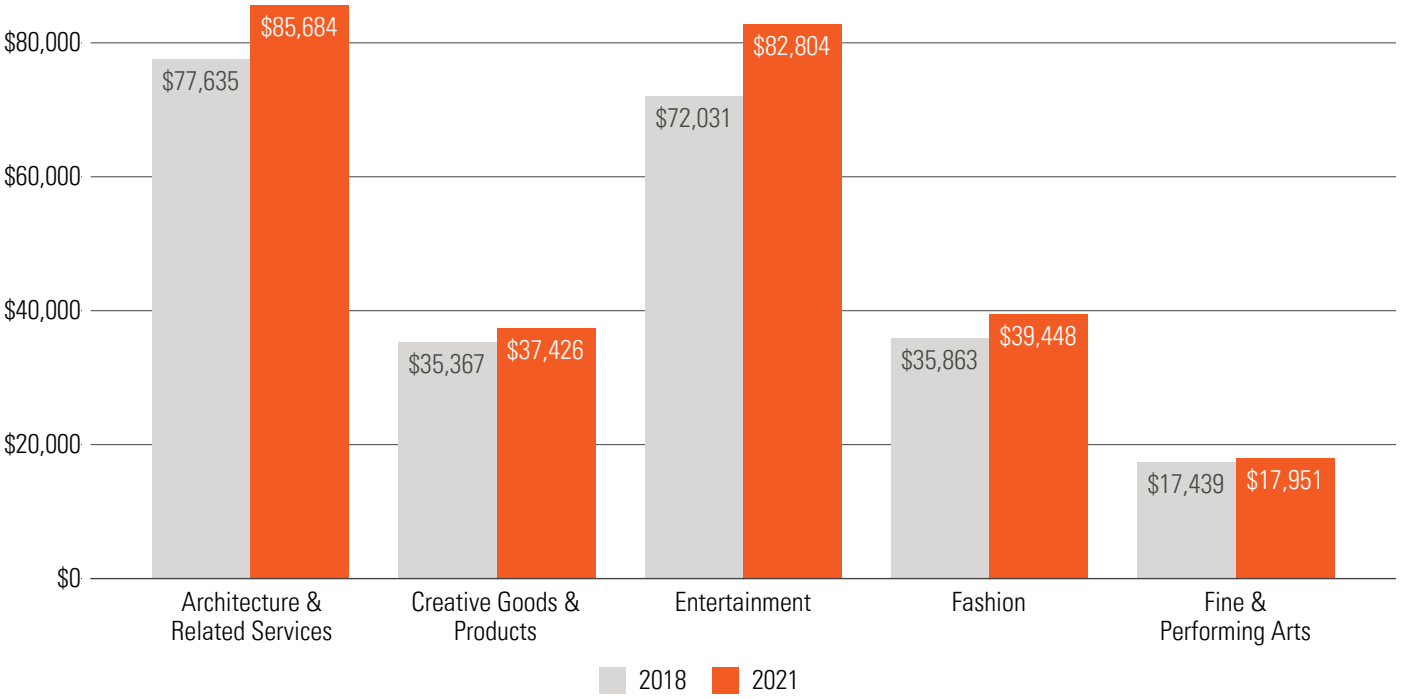
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R2.4: CREATIVE ECONOMY EMPLOYMENT BY CREATIVE SECTOR IN THE CAPITAL REGION
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R2.5: ANNUAL WAGES BY CREATIVE SECTOR IN THE CAPITAL REGION
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

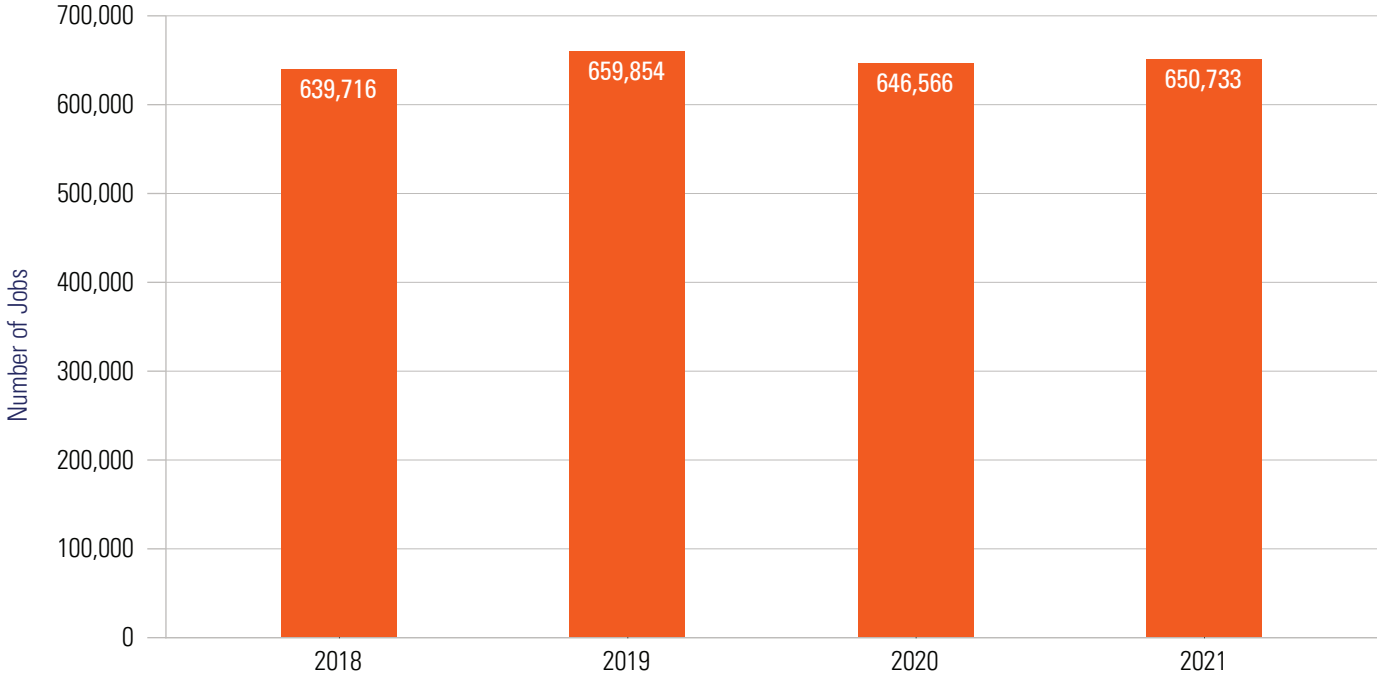
REGIONAL PROFILES

Region 3: The Bay Area

The Bay Area is one of only two regions where growth in the creative economy outperformed growth in the overall economy between 2018 and 2021. In 2019, there was a huge boost in creative jobs compared to the year prior, and despite losing about 2% of jobs in 2020, creative economy employment was still greater in 2021 than in 2018. In 2021, the number of creative jobs sat almost 2% above 2018 levels. In contrast, the Bay Area's overall economy lost 7% of its jobs between 2019 and 2020 and remains nearly 5% below 2018 levels.

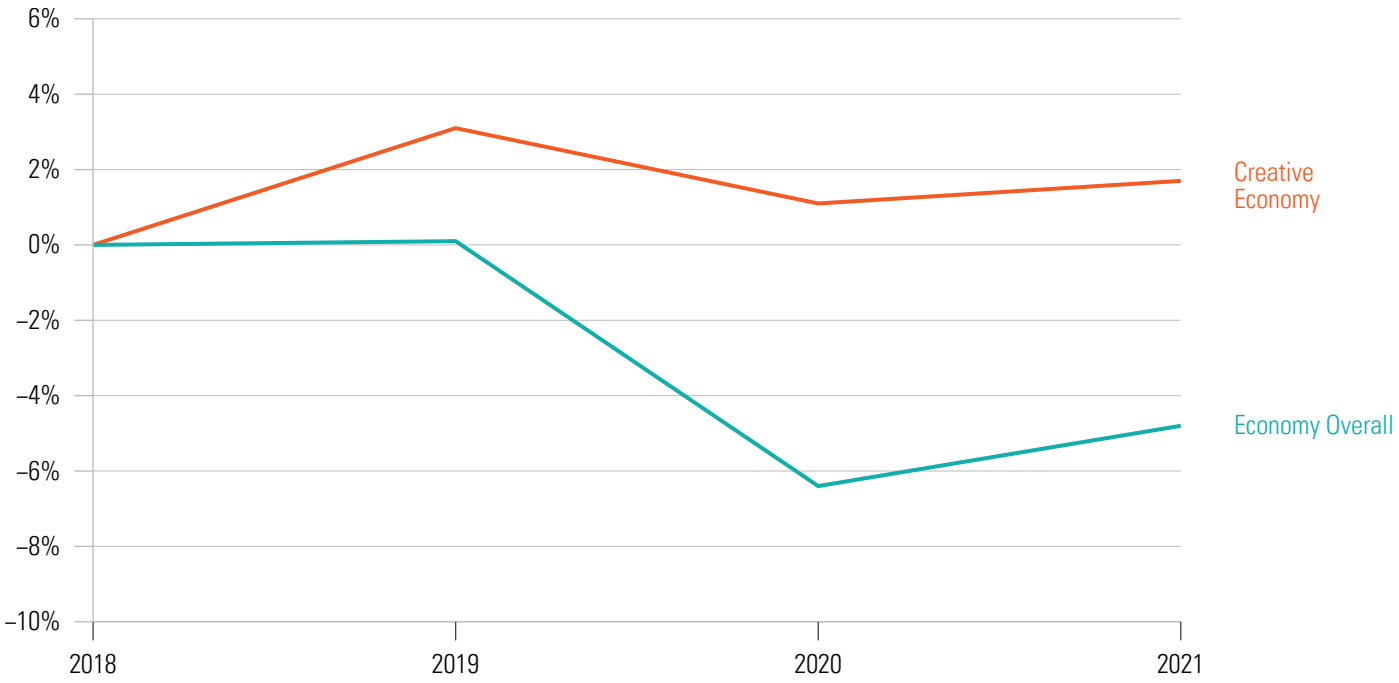
Growth is driven by changes in the Entertainment sector—which accounts for nearly 75% of the region's creative economy and was the only sector to experience growth in this period. While Entertainment employment increased 8% between 2018 and 2021, employment declined in Architecture & Related Services (-2.5%), Creative Goods & Products (-12.8%), Fashion (-13.9%), and Fine & Performing Arts (-22.1%). Entertainment was also the sector to experience the highest wage growth in this period, with average earning increasing over 40% between 2018 and 2021. The sector is also by far the highest paying—average wages are nearly three times as high as the next highest paying sector (Architecture & Related Services) and the economy overall, and nearly 12 times the lowest paying sector (Fine & Performing Arts).

FIGURE R3.1: CREATIVE ECONOMY EMPLOYMENT IN THE BAY AREA
2018 to 2021



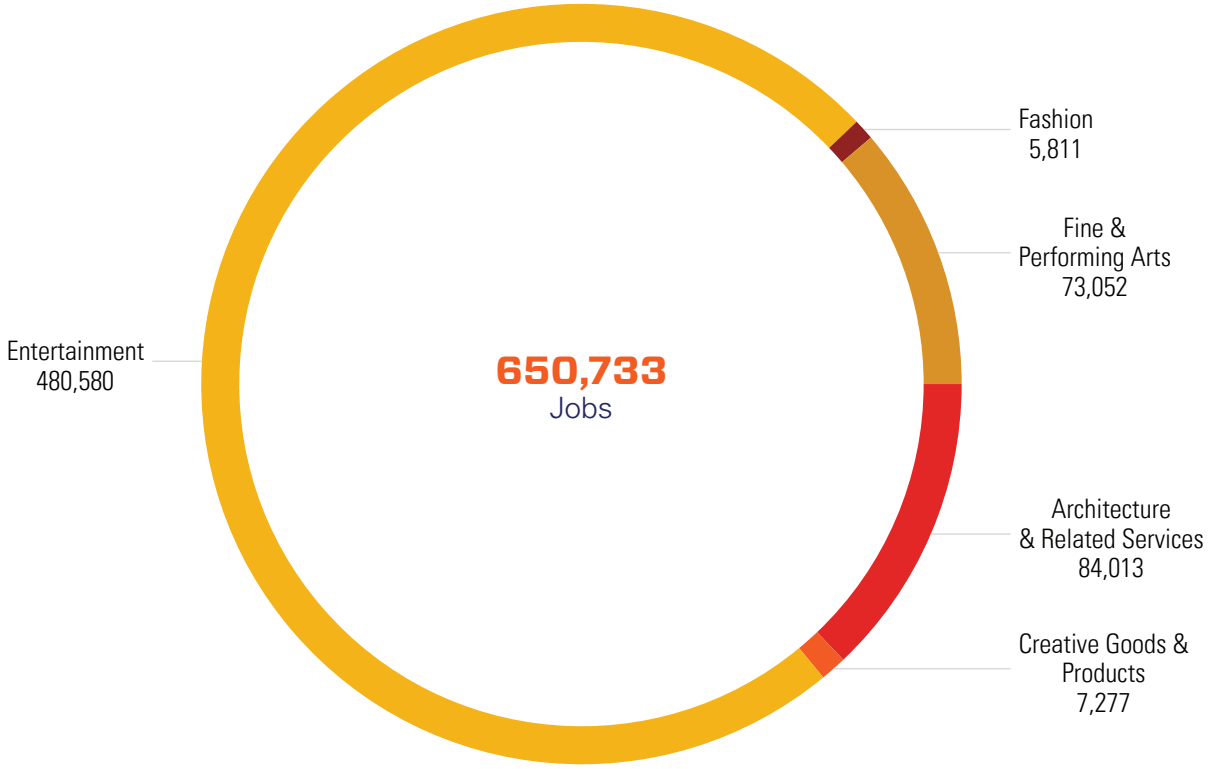
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R3.2: CREATIVE ECONOMY EMPLOYMENT GROWTH IN THE BAY AREA
2018 to 2021



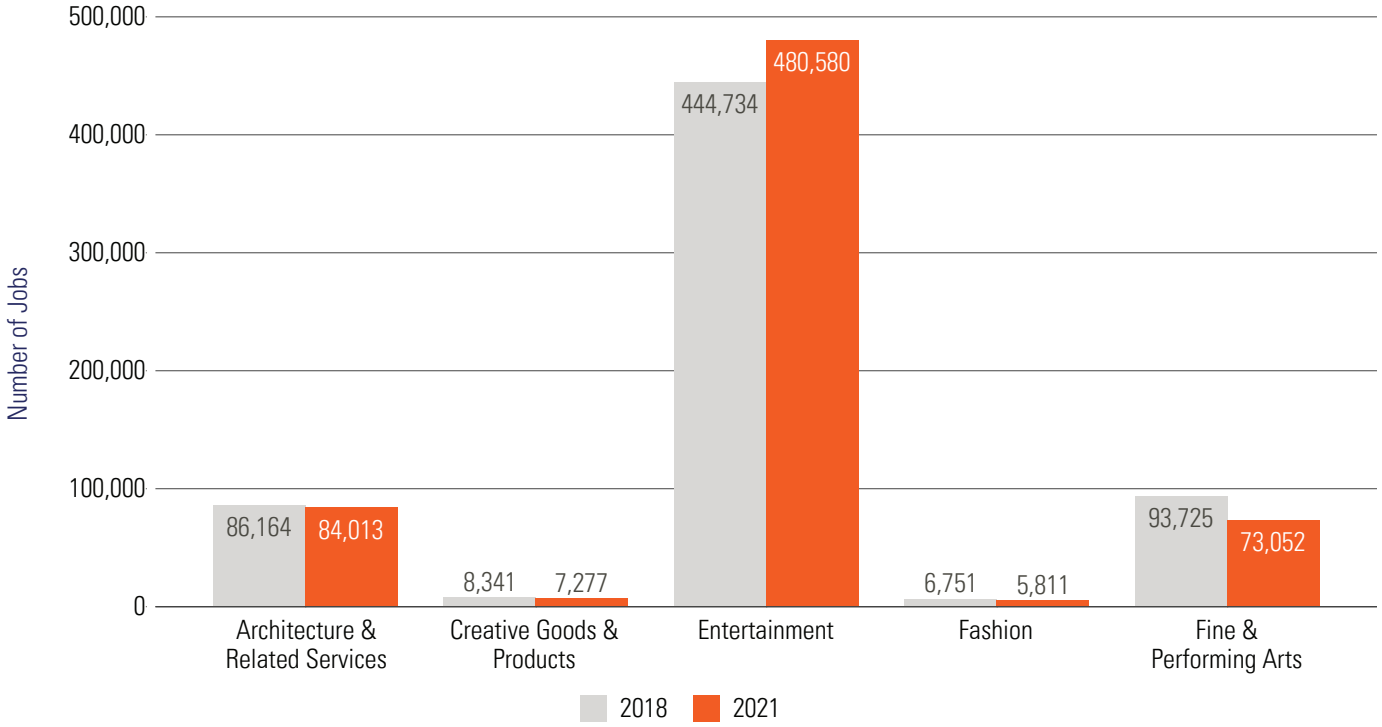
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R3.3: CREATIVE ECONOMY EMPLOYMENT SHARE BY CREATIVE SECTOR IN THE BAY AREA
2021



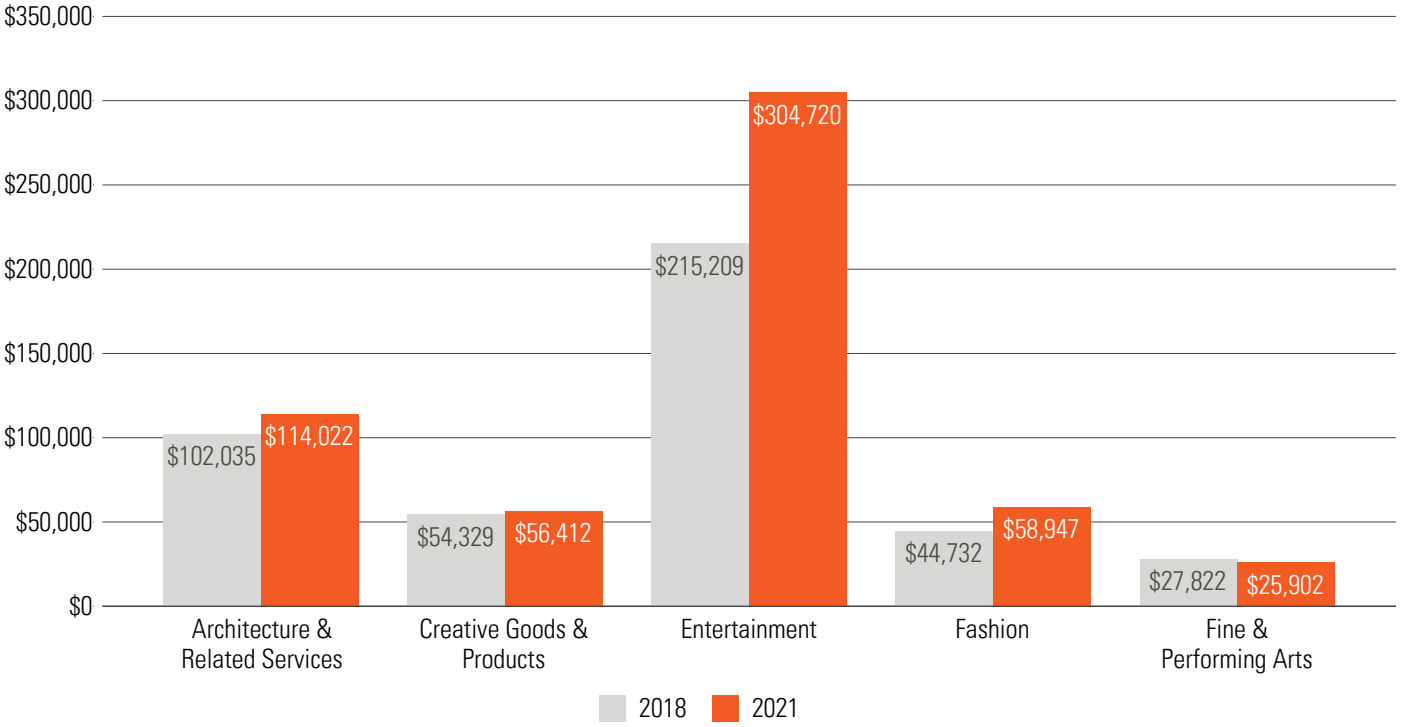
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R3.4: CREATIVE ECONOMY EMPLOYMENT BY CREATIVE SECTOR IN THE BAY AREA
2018 vs. 2021

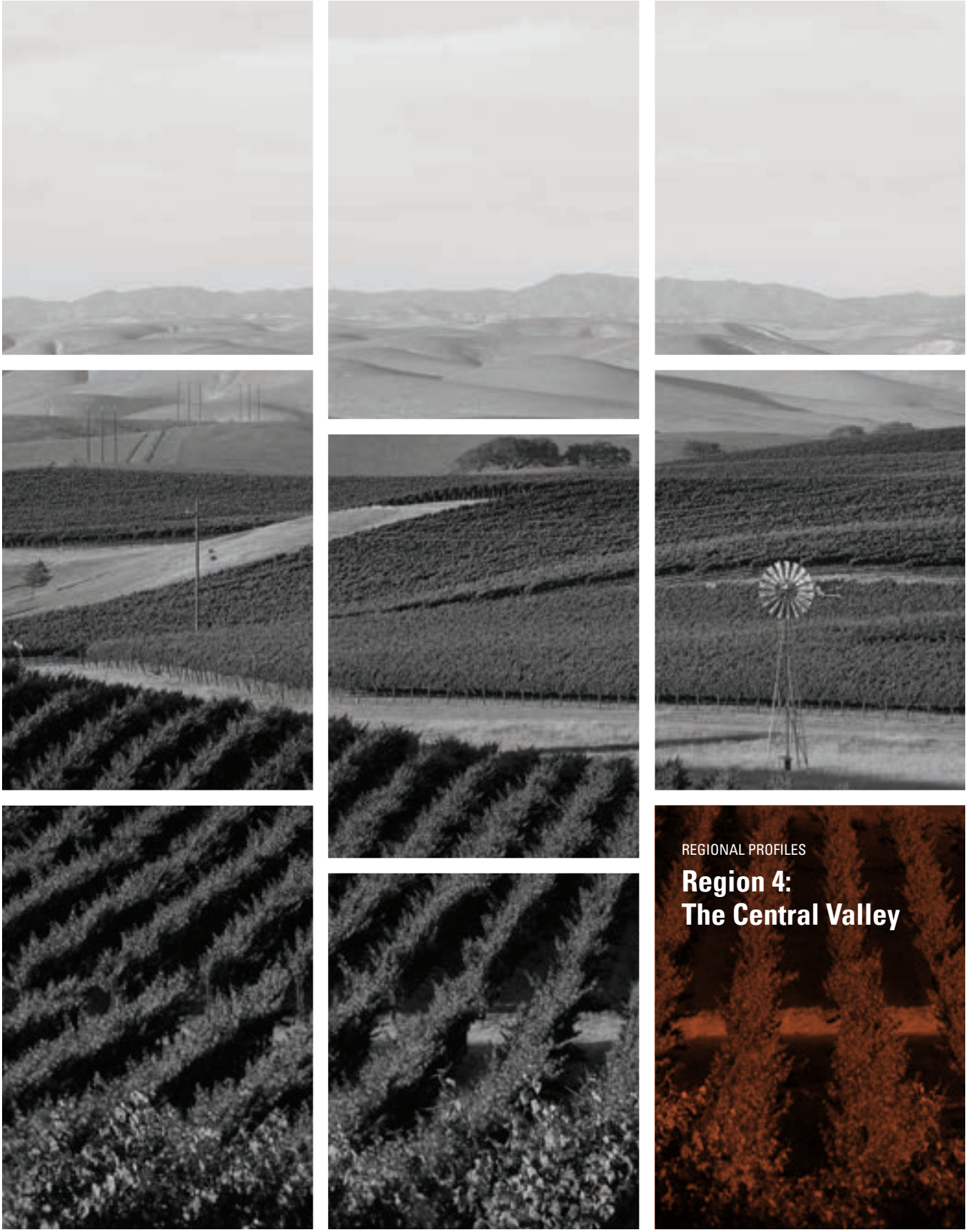


Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R3.5: ANNUAL WAGES BY CREATIVE SECTOR IN THE BAY AREA
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates



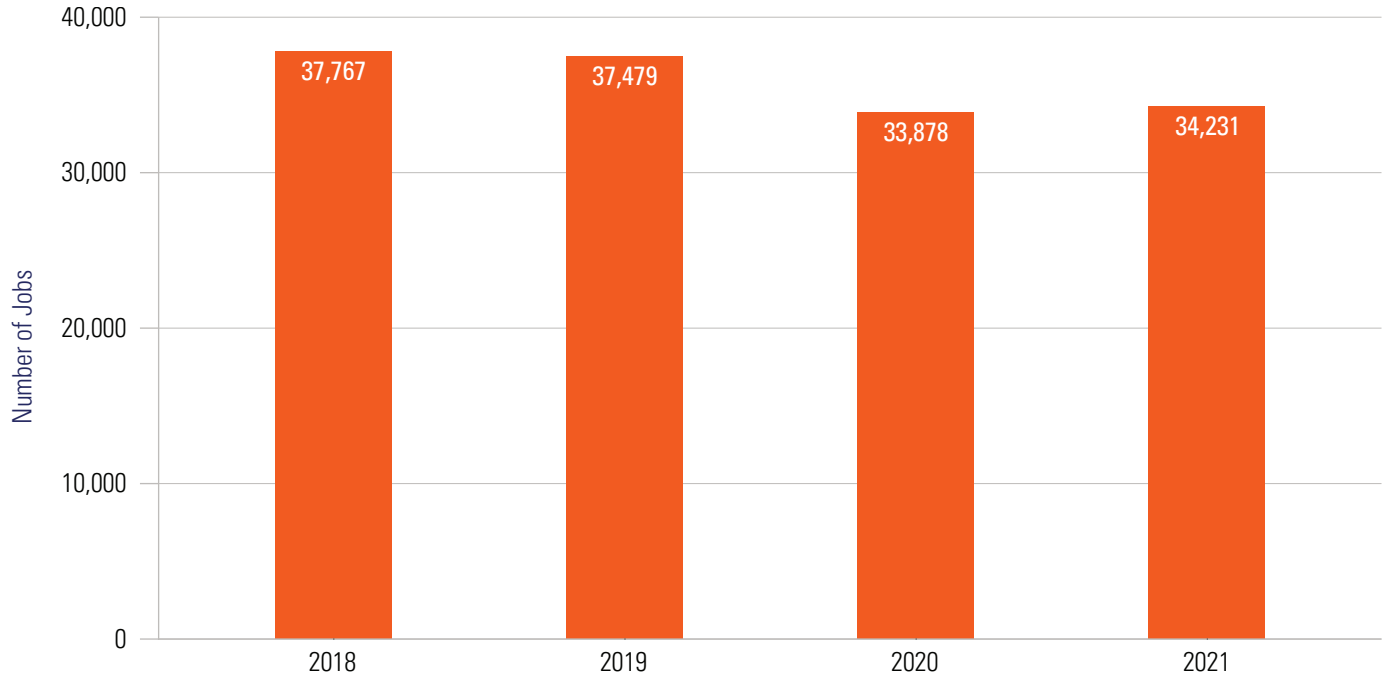
REGIONAL PROFILES

Region 4: The Central Valley

The Central Valley saw the second largest decline in creative economy employment among all regions since the pandemic, with 9.4% fewer creative economy jobs in 2021 compared to 2018. The pandemic resulted in a steeper decline in employment in the creative economy (-10%) compared to the Central Valley's economy overall (-4%). Similarly, the region's total economy has recovered more than the creative economy since the pandemic.

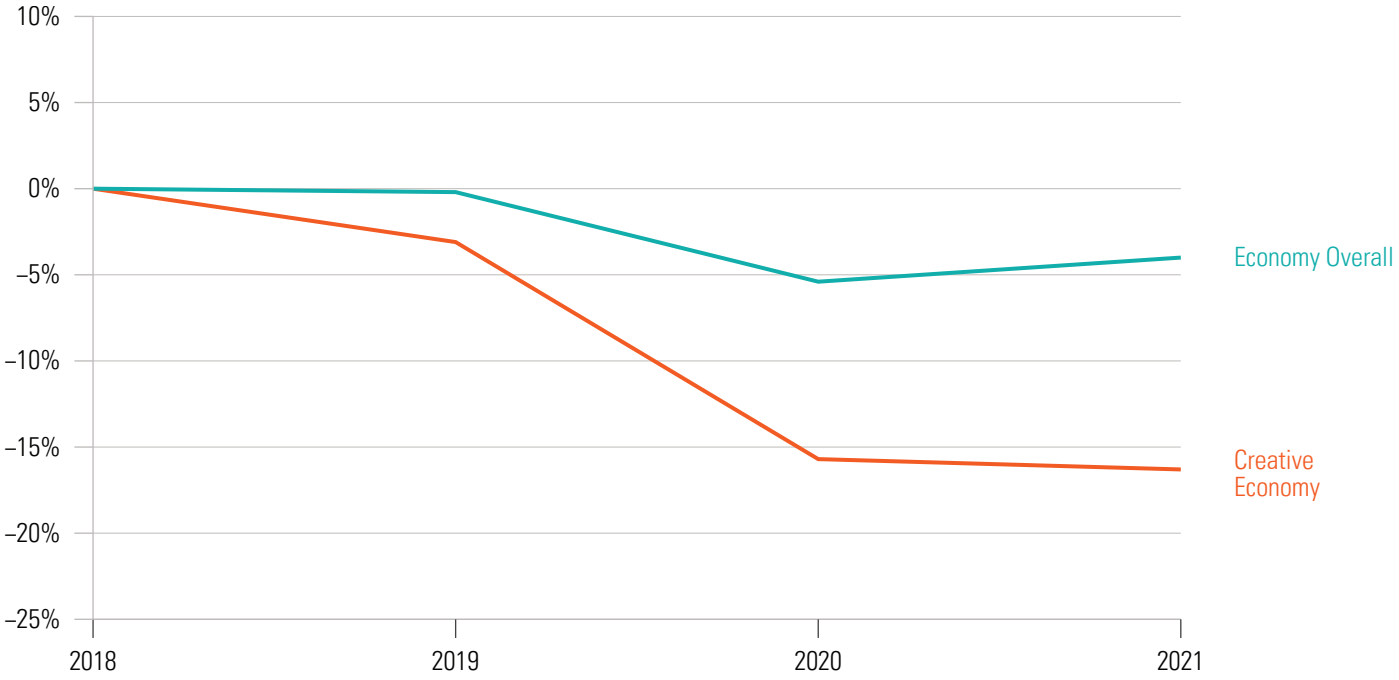
Like in other regions, Entertainment is the Central Valley's largest sector, accounting for 44% of jobs in the creative economy. This sector also experienced a large decline in jobs (-11%) which drove the broader downward trend. Only Architecture & Related Services saw job growth between 2018 and 2021 in the Central Valley, growing roughly 2% in this time period. This is also the highest paying creative sector in the region, with average earnings of $69,273. Every creative sector saw wage growth between 2018 and 2021, with Entertainment experiencing the highest growth (+18.5%), followed by Fine & Performing Arts (+17.9%) and Fashion (+14.1%).

FIGURE R4.1: CREATIVE ECONOMY EMPLOYMENT IN THE CENTRAL VALLEY
2018 to 2021



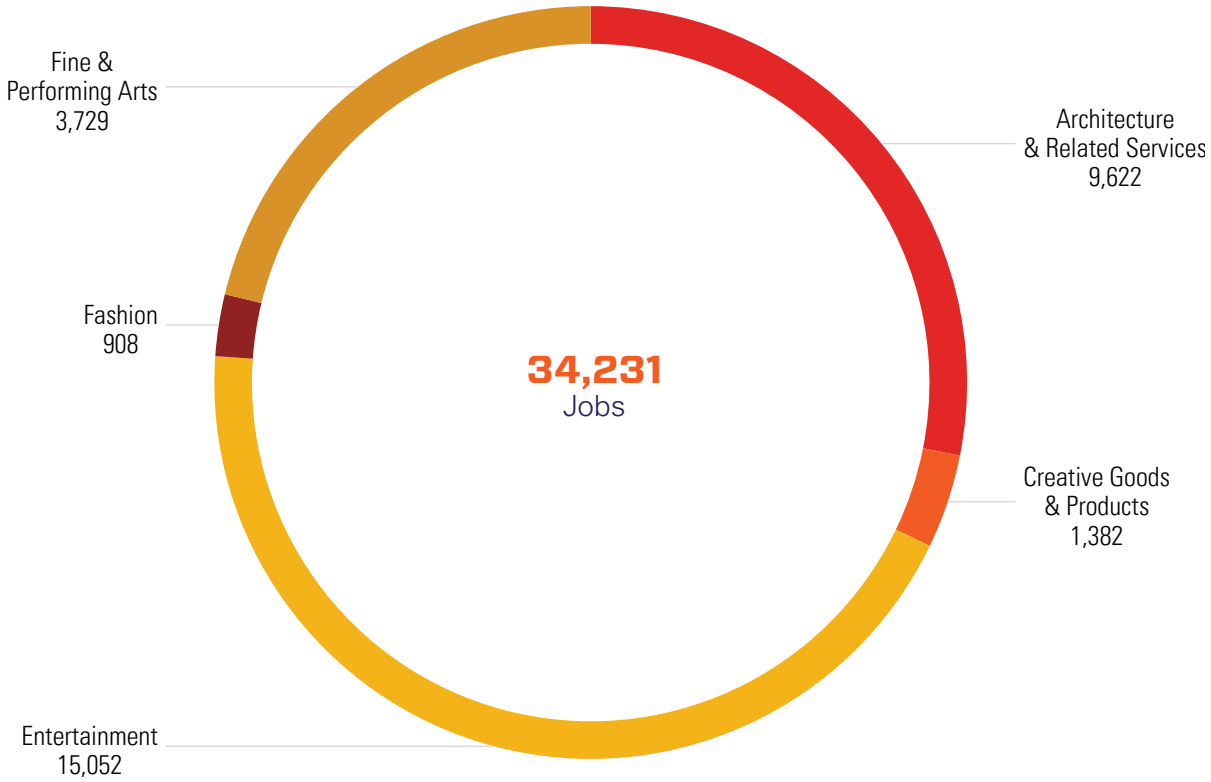
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R4.2: CREATIVE ECONOMY EMPLOYMENT GROWTH IN THE CENTRAL VALLEY
2018 to 2021



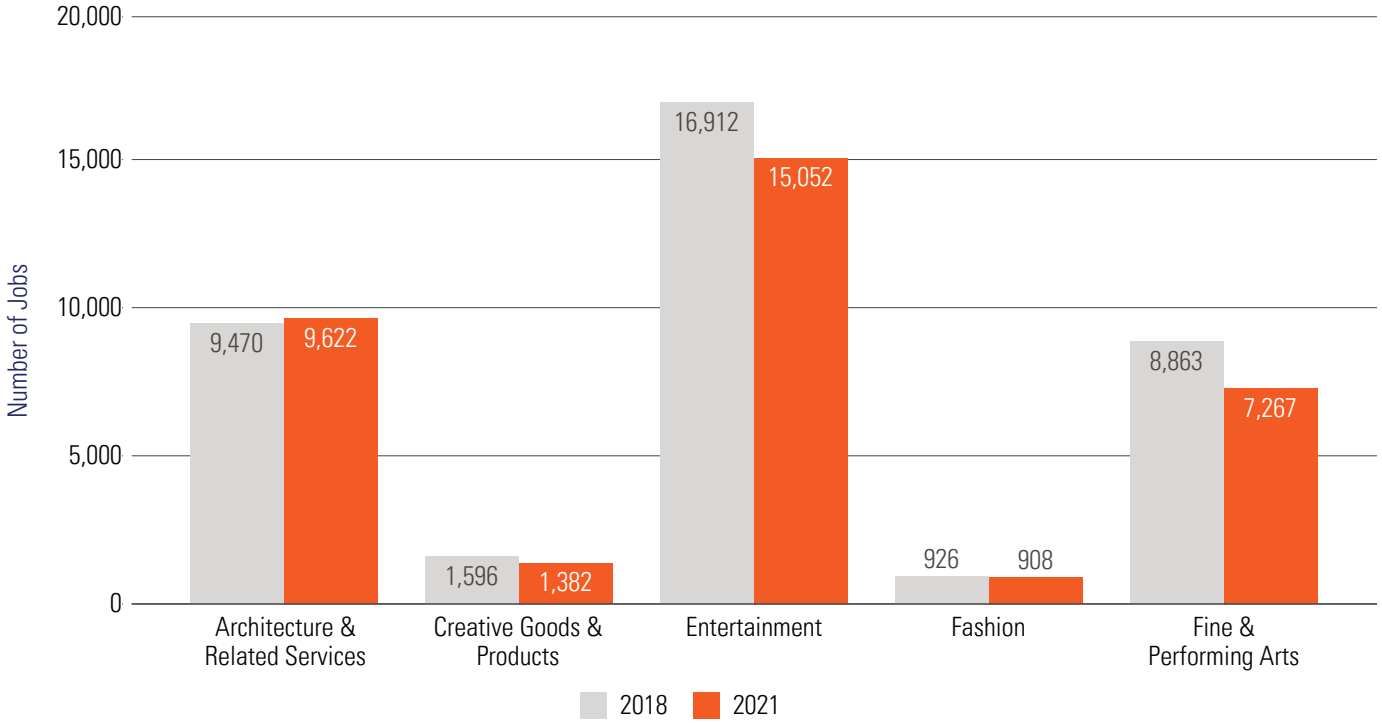
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R4.3: CREATIVE ECONOMY EMPLOYMENT SHARE BY CREATIVE SECTOR IN THE CENTRAL VALLEY
2021



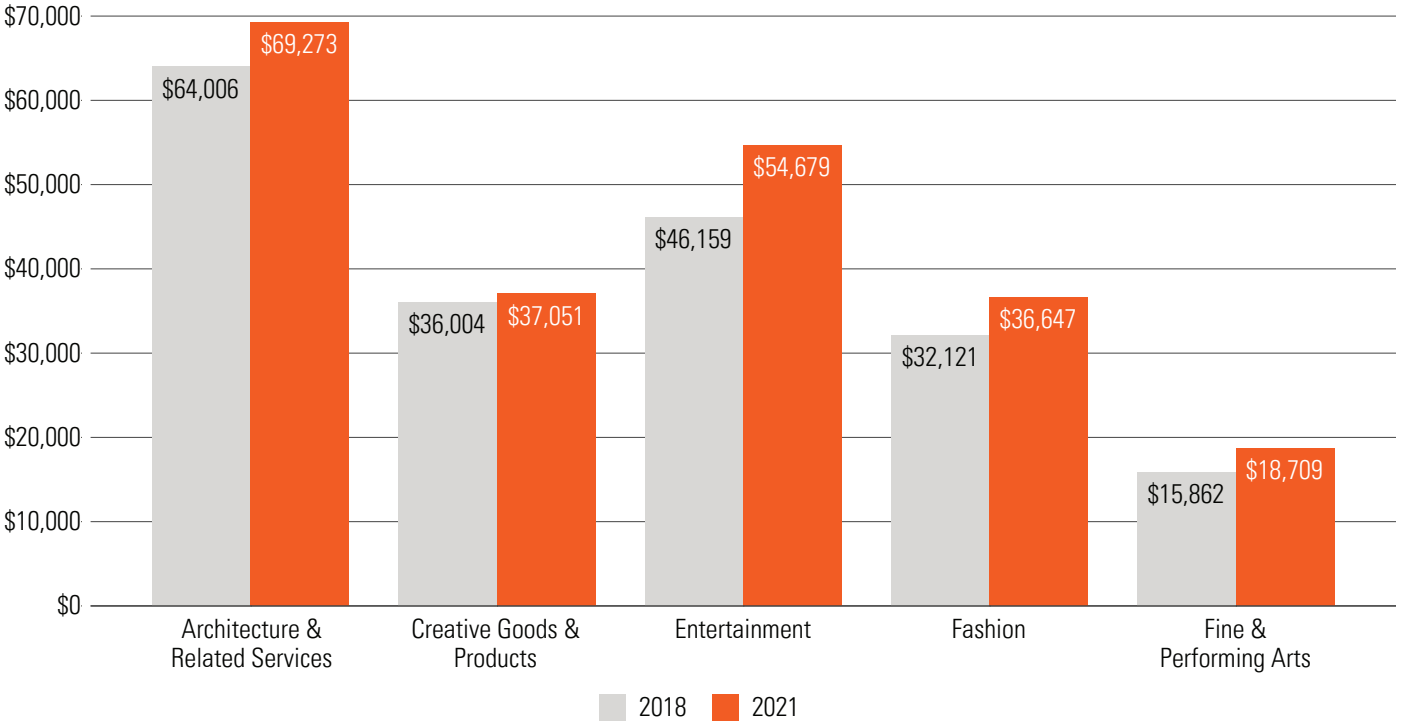
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R4.4: CREATIVE ECONOMY EMPLOYMENT BY CREATIVE SECTOR IN THE CENTRAL VALLEY
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R4.5: ANNUAL WAGES BY CREATIVE SECTOR IN THE CENTRAL VALLEY
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

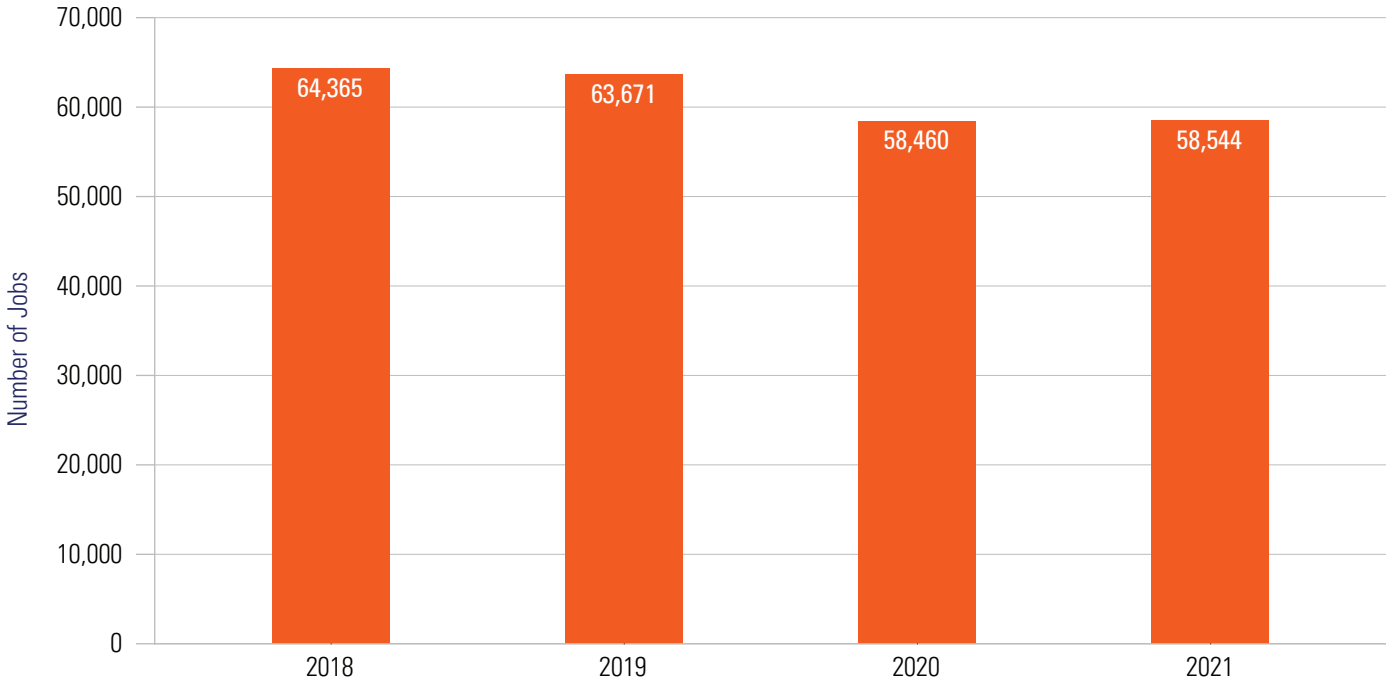
REGIONAL PROFILES

Region 5: The Central Coast

Like most regions, the Central Coast's creative economy experienced a steeper decline in employment than its overall economy in 2020. Between 2019 and 2020, the creative economy contracted 8% compared to 5% for the overall economy. And while the economy overall has started to recover in 2021, the creative economy remained relatively stagnant since 2020, increasing only 0.1% in this period. Even before the pandemic, the region's creative economy declined 1.1% between 2018 and 2019.

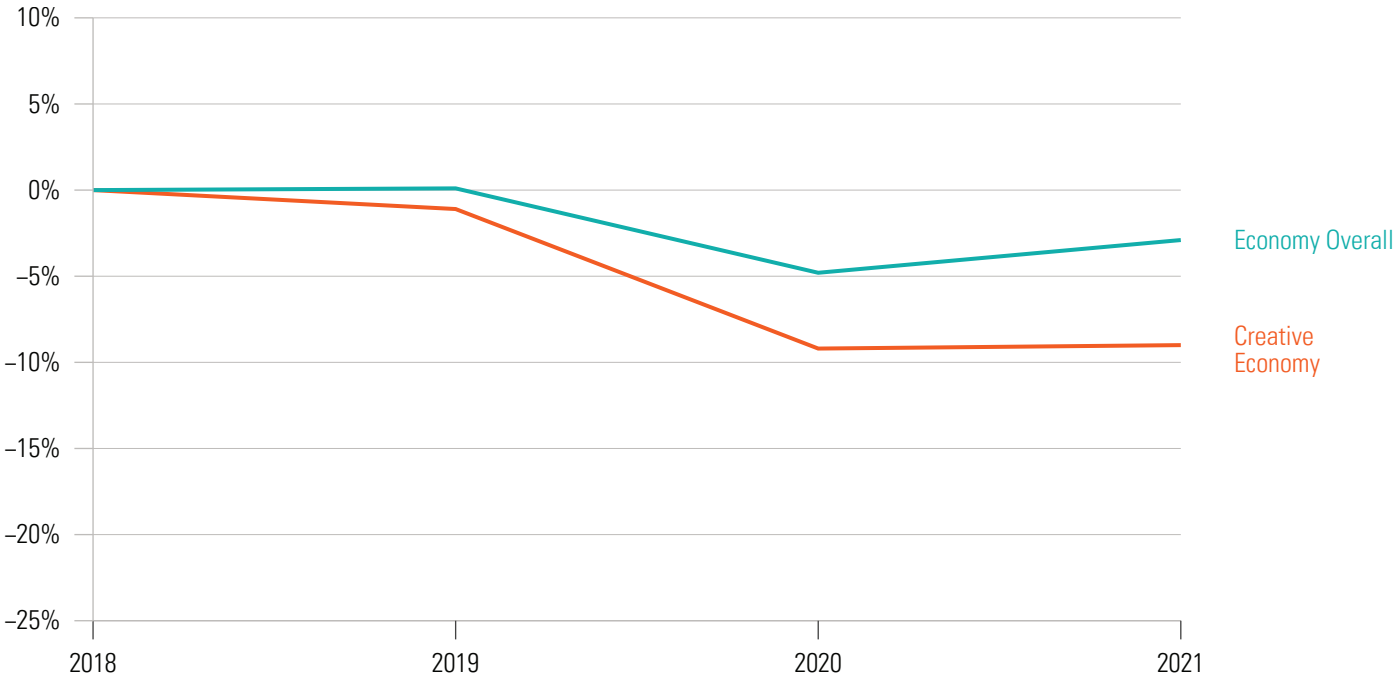
Declines in Entertainment and Fine & Performing Arts—which combined account for 66% of the region's creative economy—drove this outcome. Fine & Performing Arts was the sector that declined the most, losing nearly 21% of jobs between 2018 and 2021, and Entertainment lost almost 9% of jobs. The region's second-largest sector, Architecture & Related Services, grew 1.2% and Fashion, the smallest sector, grew by almost 24%. While the Central Coast's Fashion sector pays higher than average compared to other regions, it was the only sector in the region where wages declined between 2018 and 2021 (-5.2%). Wages in Entertainment grew the most (+34.5%), followed by Architecture & Related Services (+12.2%).

FIGURE R5.1: CREATIVE ECONOMY EMPLOYMENT IN THE CENTRAL COAST
2018 to 2021



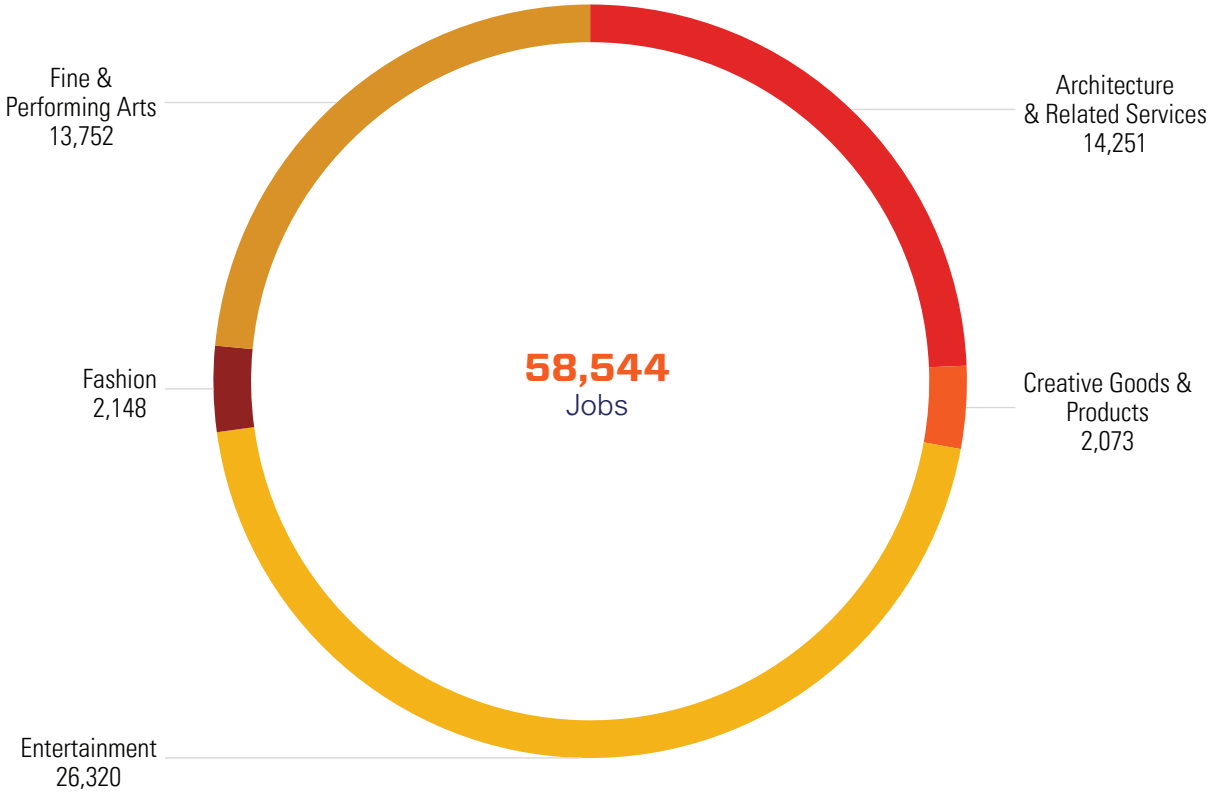
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R5.2: CREATIVE ECONOMY EMPLOYMENT GROWTH IN THE CENTRAL COAST
2018 to 2021



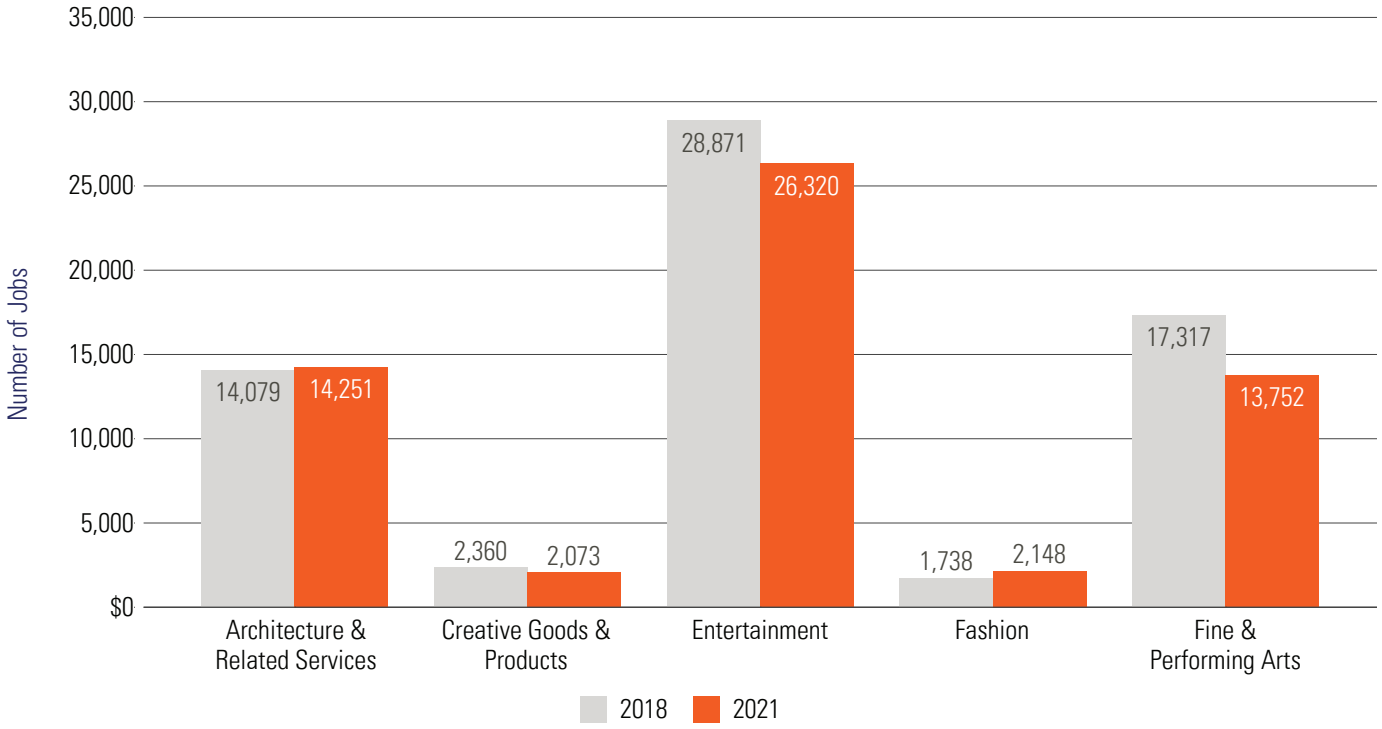
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R5.3: CREATIVE ECONOMY EMPLOYMENT SHARE BY CREATIVE SECTOR IN THE CENTRAL COAST
2021



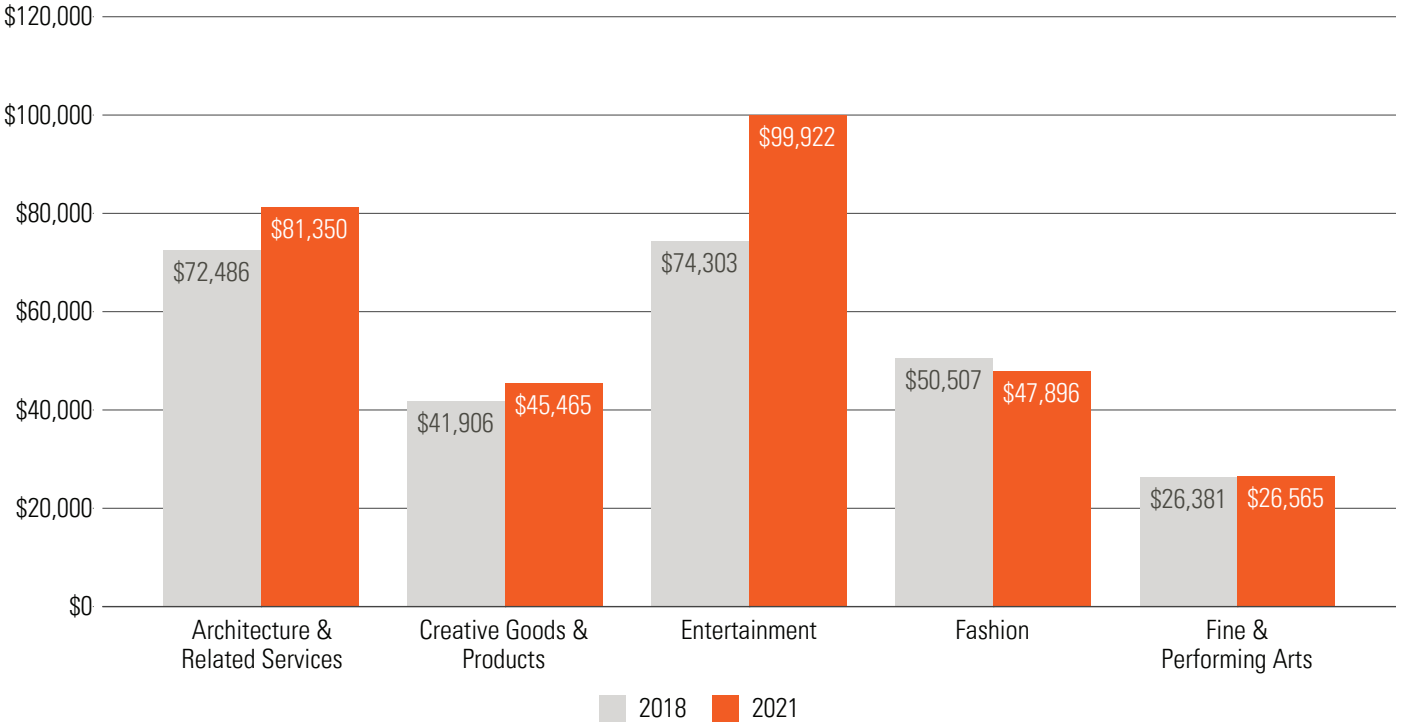
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R5.4: CREATIVE ECONOMY EMPLOYMENT BY CREATIVE SECTOR IN THE CENTRAL COAST
2018 vs. 2021

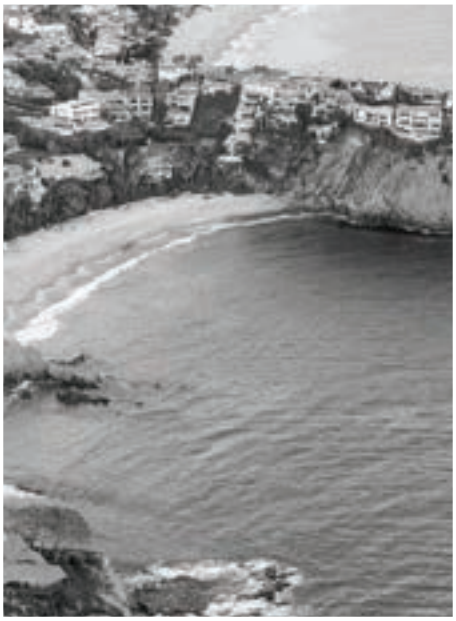
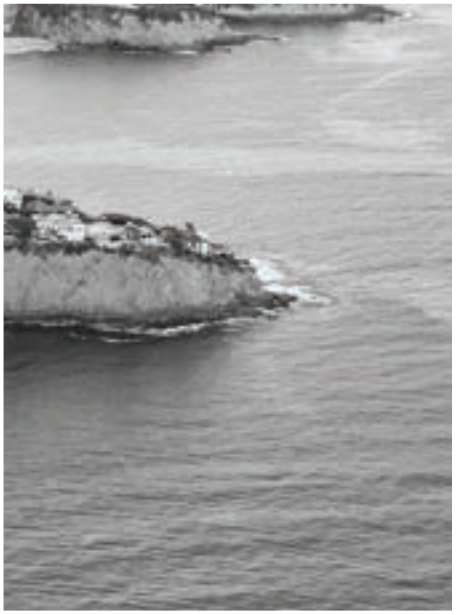


Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R5.5: ANNUAL WAGES BY CREATIVE SECTOR IN THE CENTRAL COAST
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

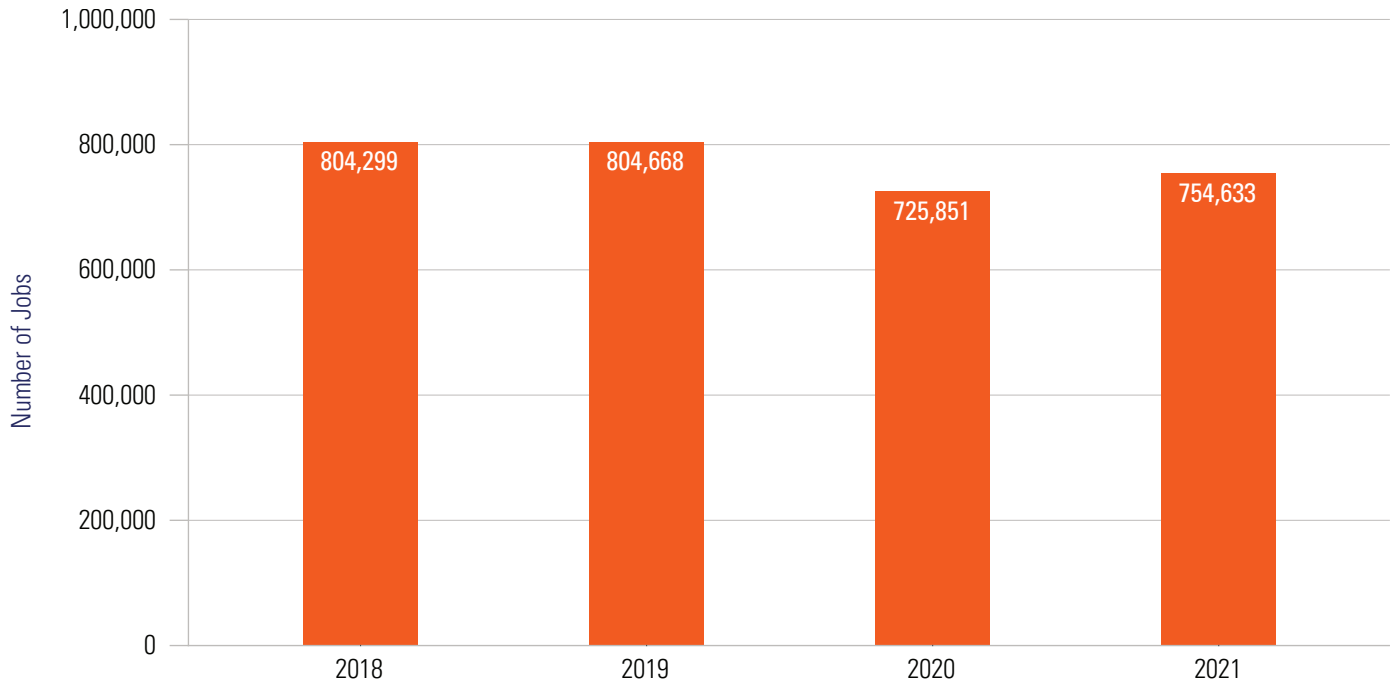
REGIONAL PROFILES

Region 6: Southern California

Employment trends in Southern California's creative economy have underperformed that of the region's overall economy. Following a slight uptick in the year prior, between 2019 and 2020 employment declined 9.8% in the creative economy compared to 7.2% in the region's economy overall. However, creative economy employment has recovered faster than the economy overall, increasing 4.0% versus 2.6%, respectively, between 2020 and 2021. In 2021, Southern California's creative economy sat 6.2% below pre-pandemic (2018) levels.

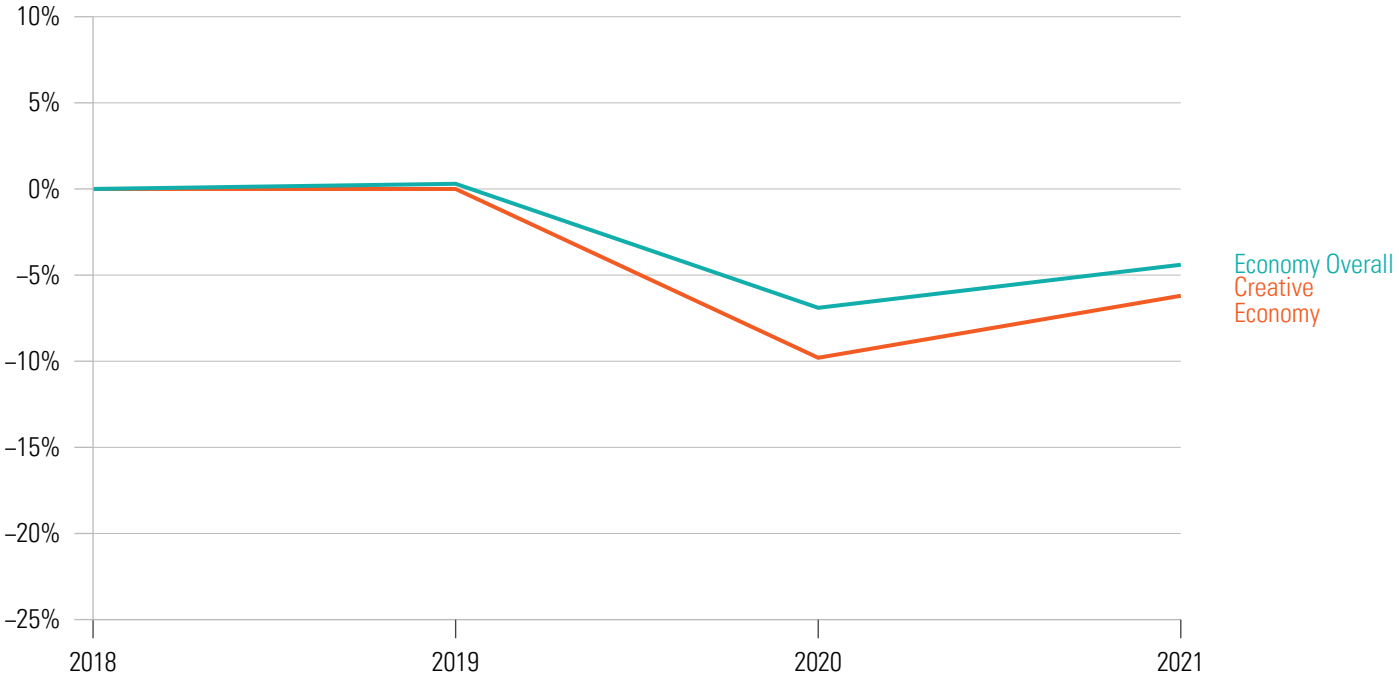
Entertainment accounts for more than half (55%) of Southern California's creative economy. The next largest sector is Fine & Performing Arts (22%), followed by Architecture & Related Services (14%). Between 2018 and 2021, employment in Creative Goods & Products, Fashion, and Fine & Performing Arts decreased about 20% each, while employment in Entertainment and Architecture & Related Services increased about 1% each in this same period. Entertainment—the highest-paying sector—also experienced the largest growth in wages, which increased 22% between 2018 and 2021. In fact, all sectors experienced over 10% wage growth in this period, except for Fashion, where wages increased 7%.

FIGURE R6.1: CREATIVE ECONOMY EMPLOYMENT IN SOUTHERN CALIFORNIA
2018 to 2021



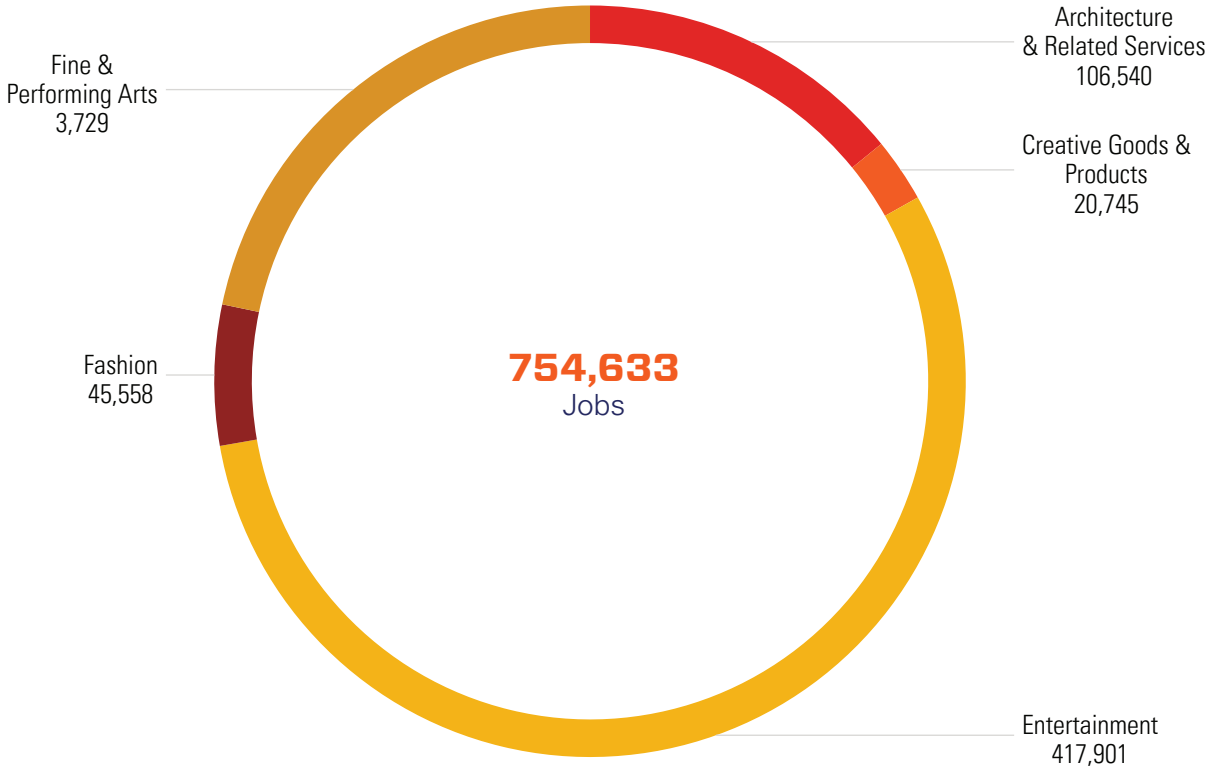
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R6.2: CREATIVE ECONOMY EMPLOYMENT GROWTH IN SOUTHERN CALIFORNIA
2018 to 2021



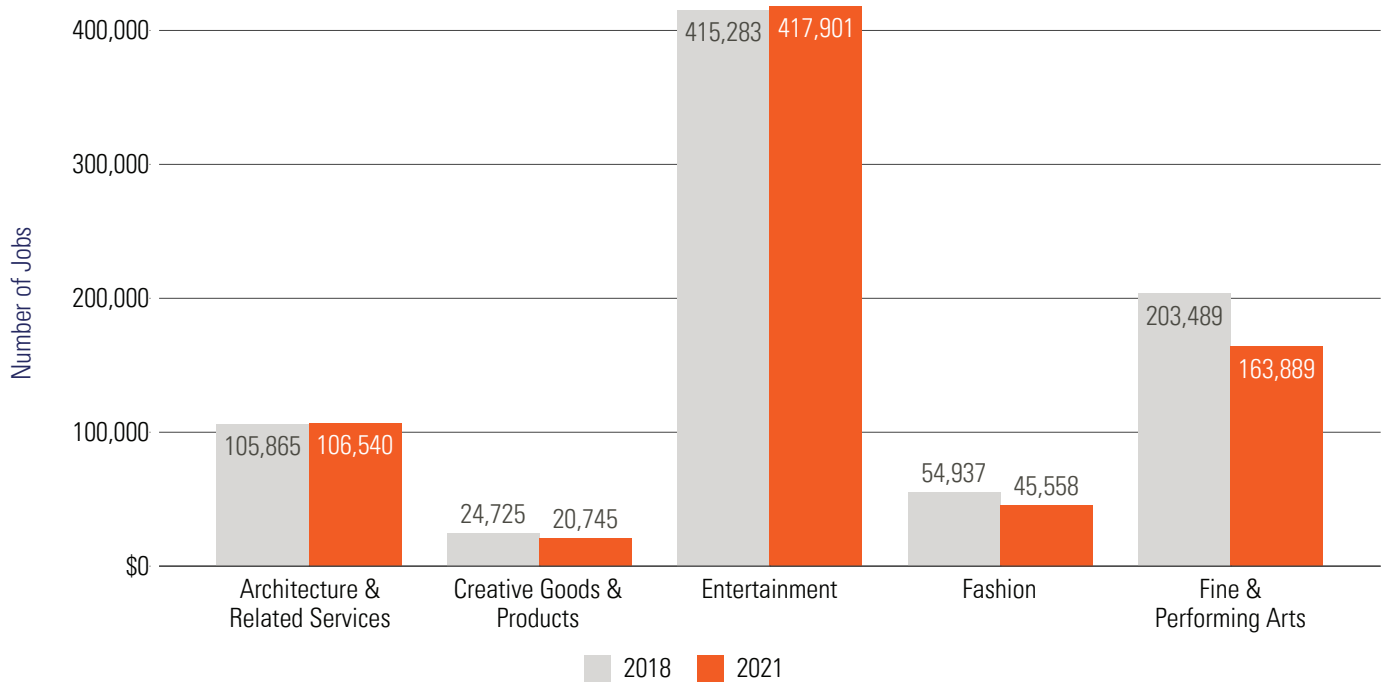
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R6.3: CREATIVE ECONOMY EMPLOYMENT SHARE BY CREATIVE SECTOR IN SOUTHERN CALIFORNIA
2021



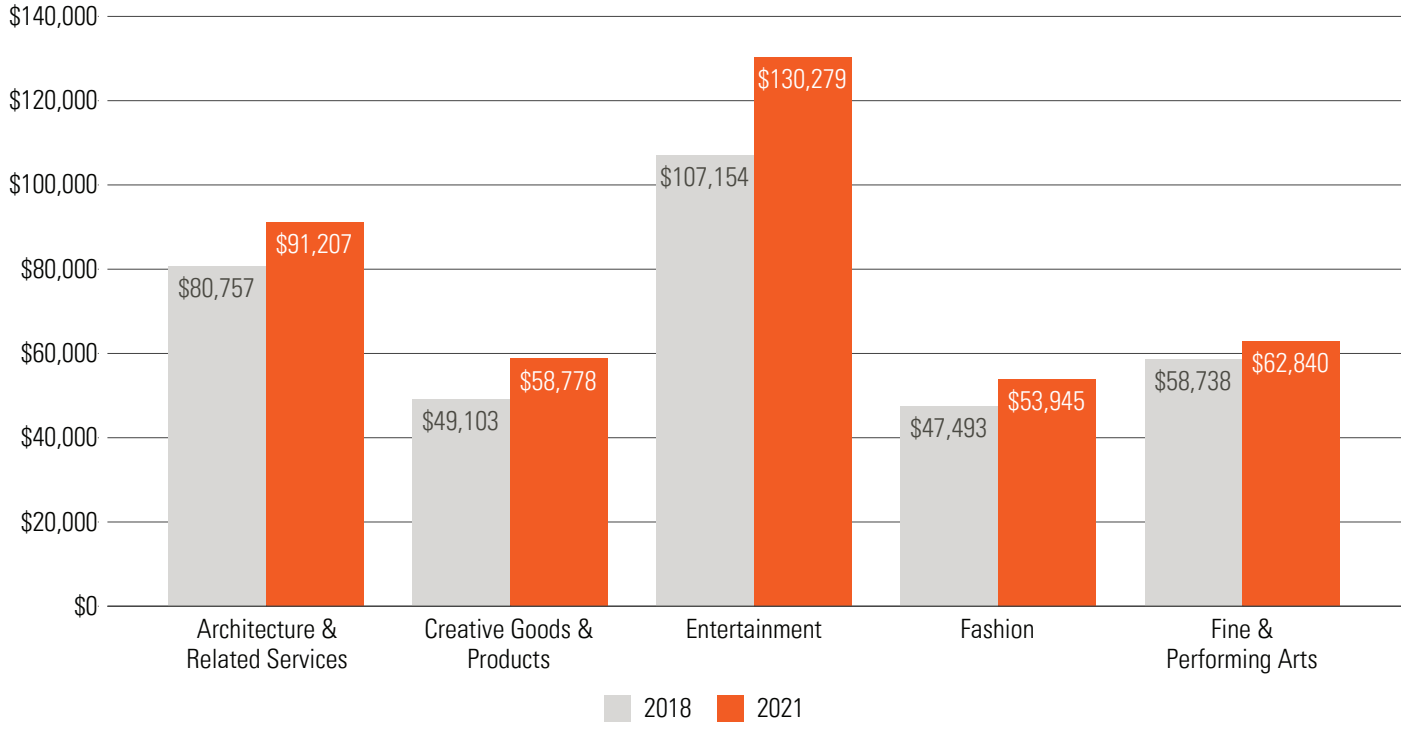
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R6.4: CREATIVE ECONOMY EMPLOYMENT BY CREATIVE SECTOR IN SOUTHERN CALIFORNIA
2018 vs. 2021

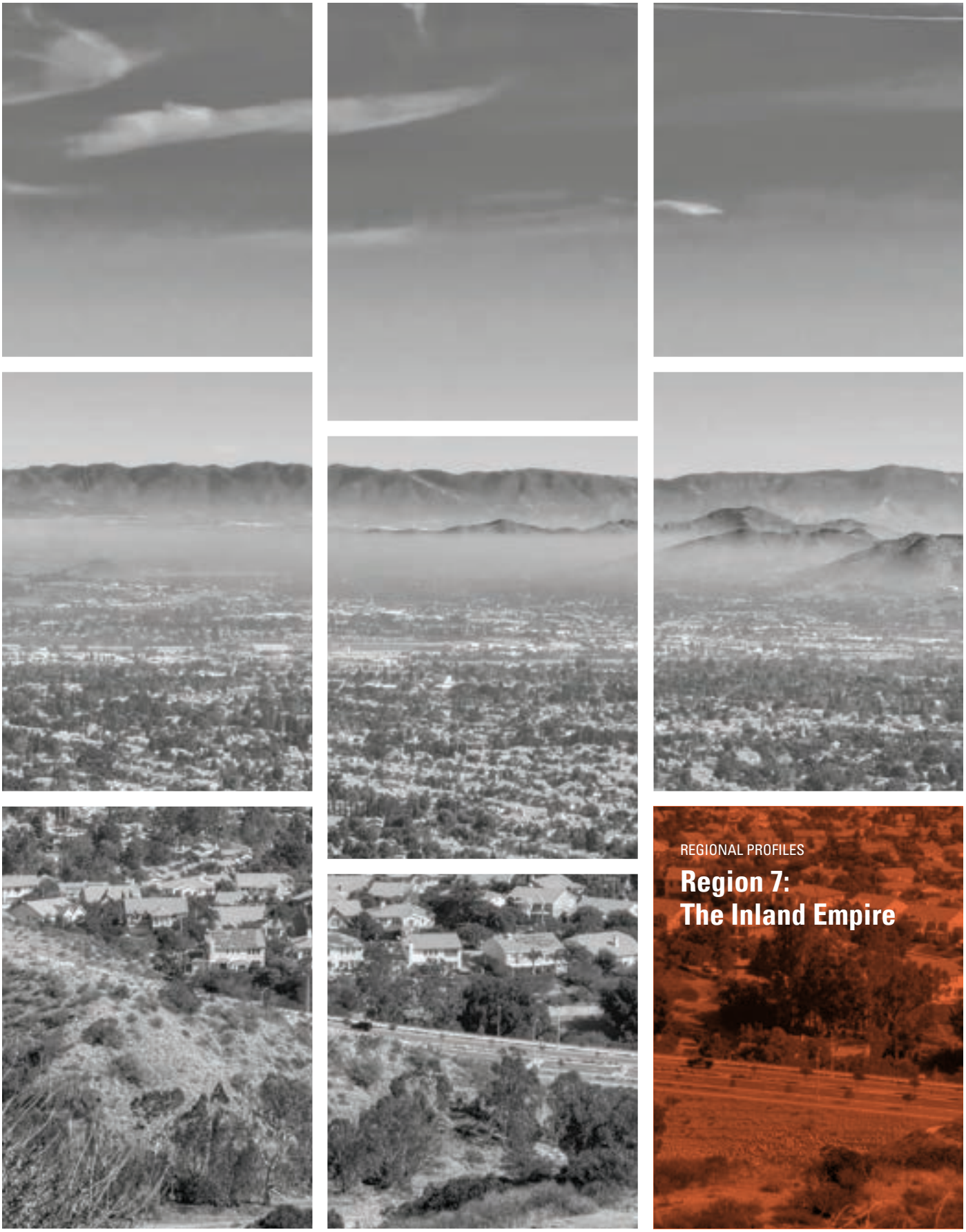


Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R6.5: ANNUAL WAGES BY CREATIVE SECTOR IN SOUTHERN CALIFORNIA
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates



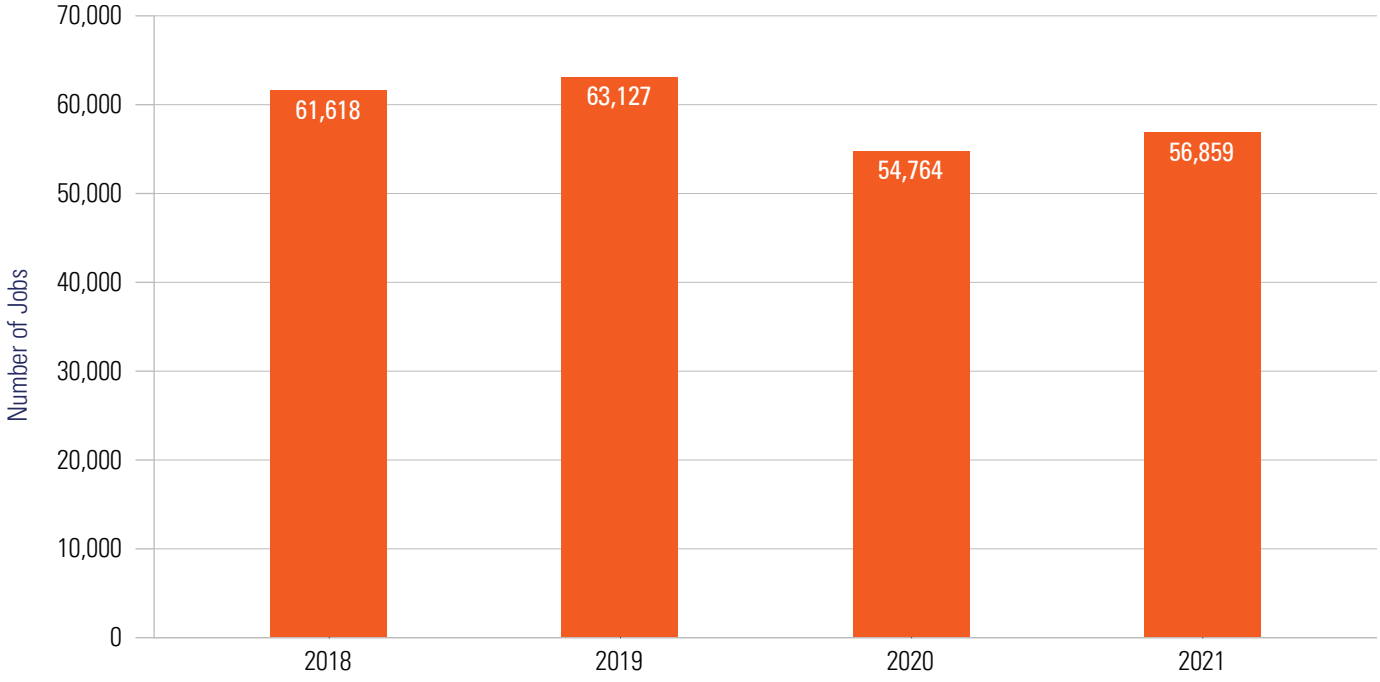
REGIONAL PROFILES

Region 7: The Inland Empire

The creative economy in the Inland Empire has not fared as well as the economy overall following the onset of the pandemic in 2020. The creative economy was on an upward trend before the pandemic, but then lost 10% of jobs in 2020 while the economy overall lost 4% of jobs. In 2021, while the economy overall sits nearly 3% above pre-pandemic levels, the creative economy is still 5.4% below its 2018 value.

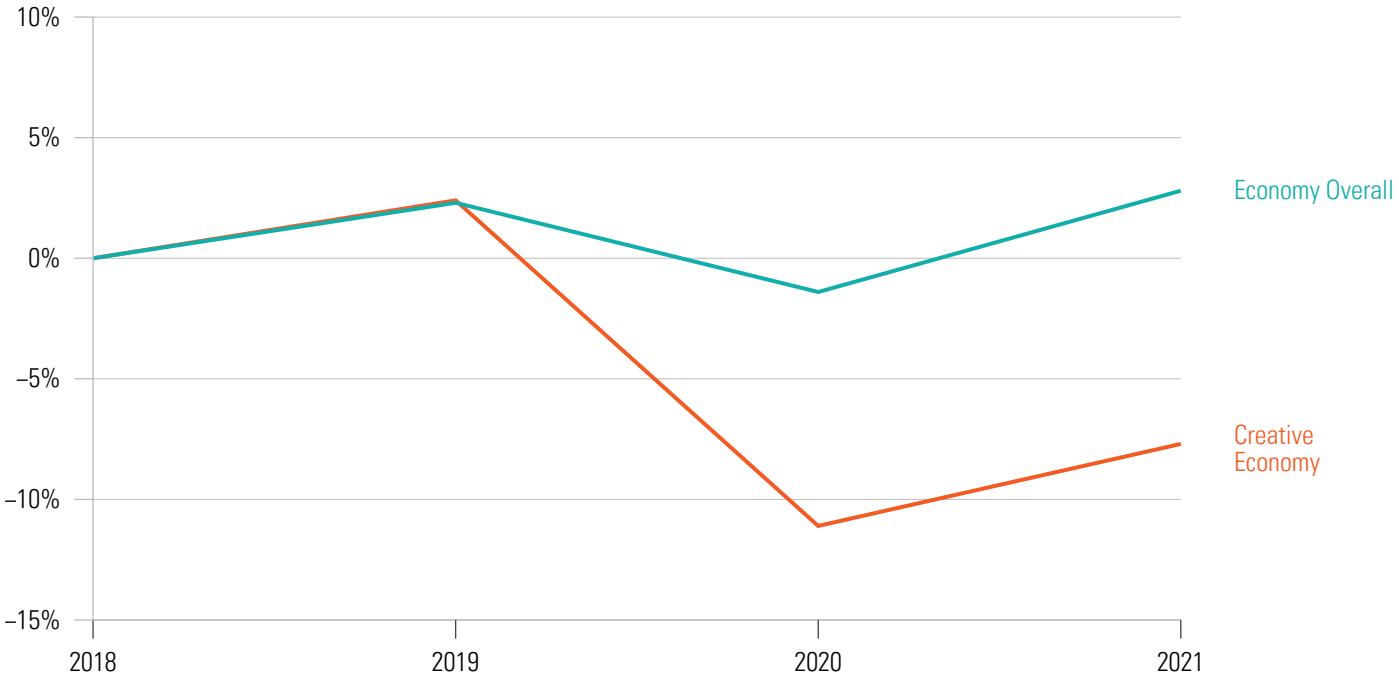
Unlike all the other regions, the largest creative sector in the Inland Empire is Architecture & Related Services, accounting for 31% of creative economy employment. Architecture & Related Services was also the only sector to have gained jobs between 2018 and 2021, with a 12% employment increase. The sector is also among the highest paying sectors ($67,306), with the average wage sitting above that of the creative economy overall ($49,365). The next largest sector is Entertainment (28%), which experienced the highest wage growth between 2018 and 2021, followed by Fine & Performing Arts (26%), the only sector to experience a drop in wages in this period.

FIGURE R7.1: CREATIVE ECONOMY EMPLOYMENT IN THE INLAND EMPIRE
2018 to 2021



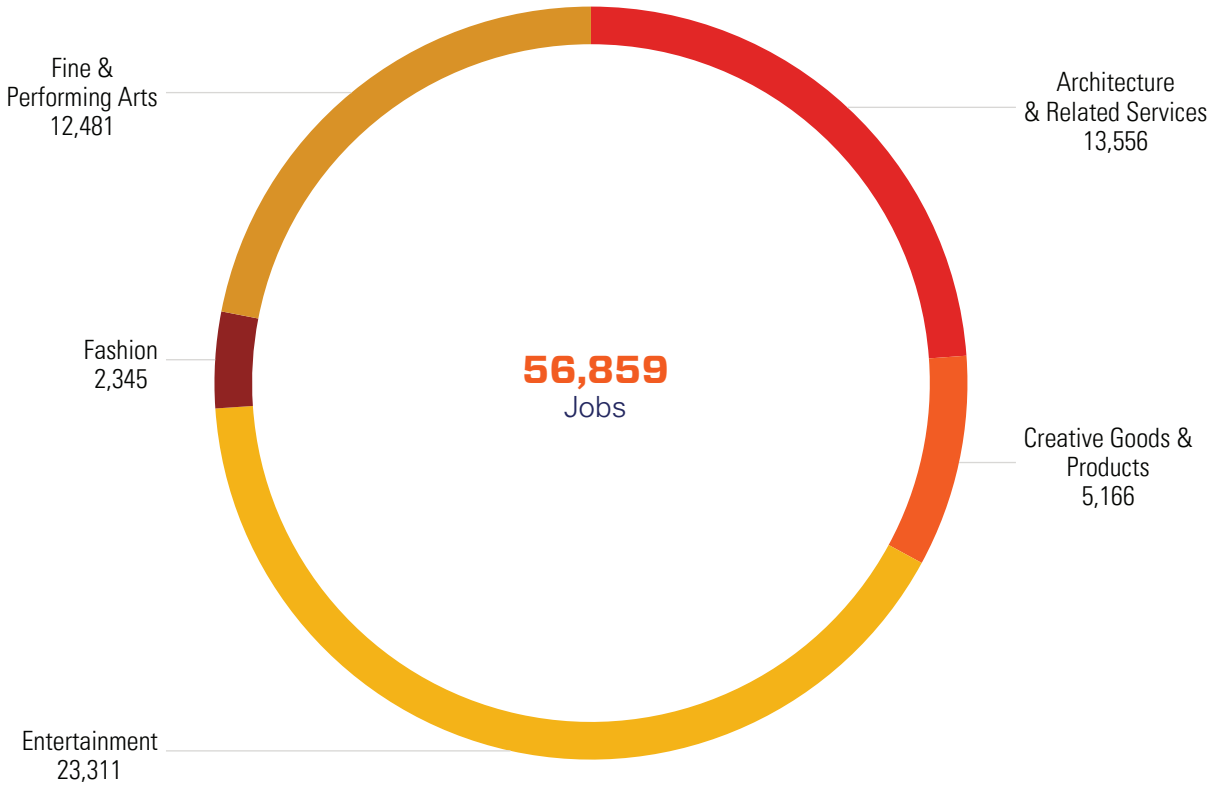
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R7.2: CREATIVE ECONOMY EMPLOYMENT GROWTH IN THE INLAND EMPIRE
2018 to 2021



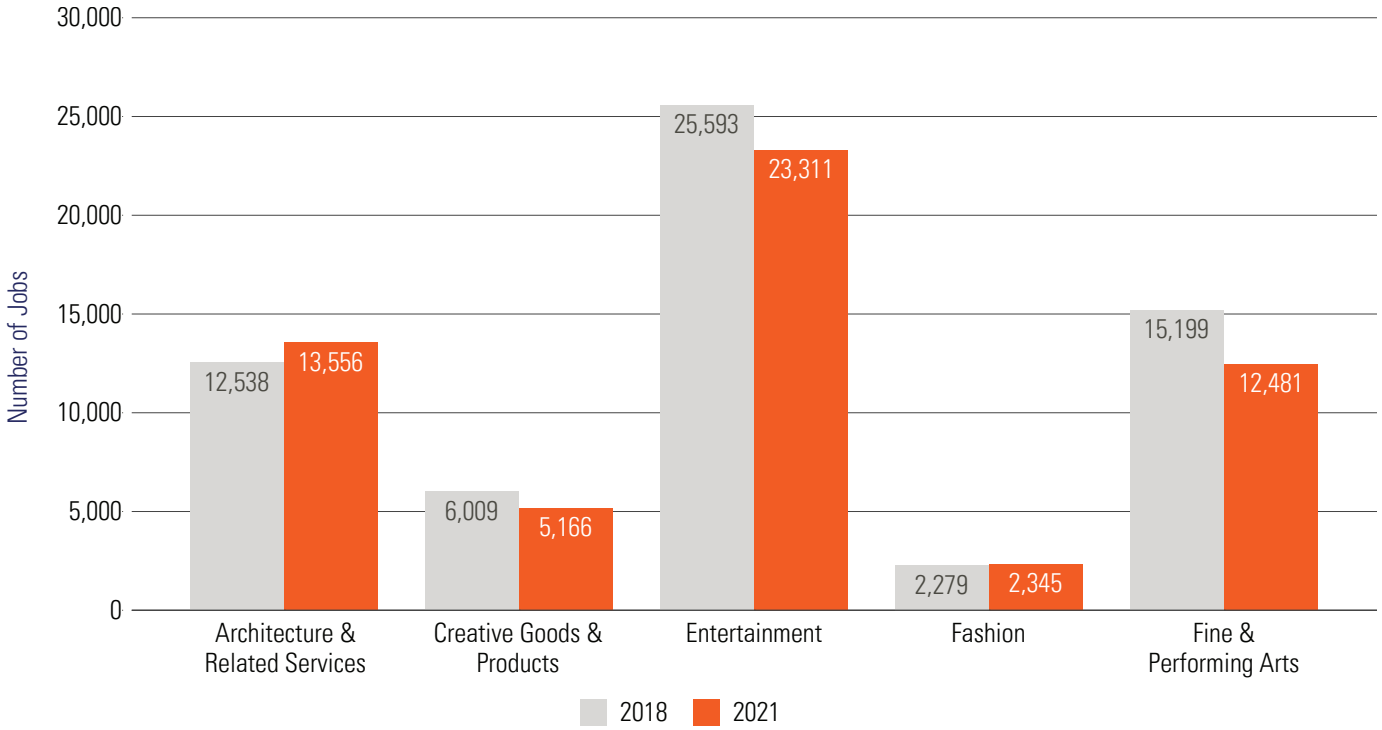
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R7.3: CREATIVE ECONOMY EMPLOYMENT SHARE BY CREATIVE SECTOR IN THE INLAND EMPIRE
2021



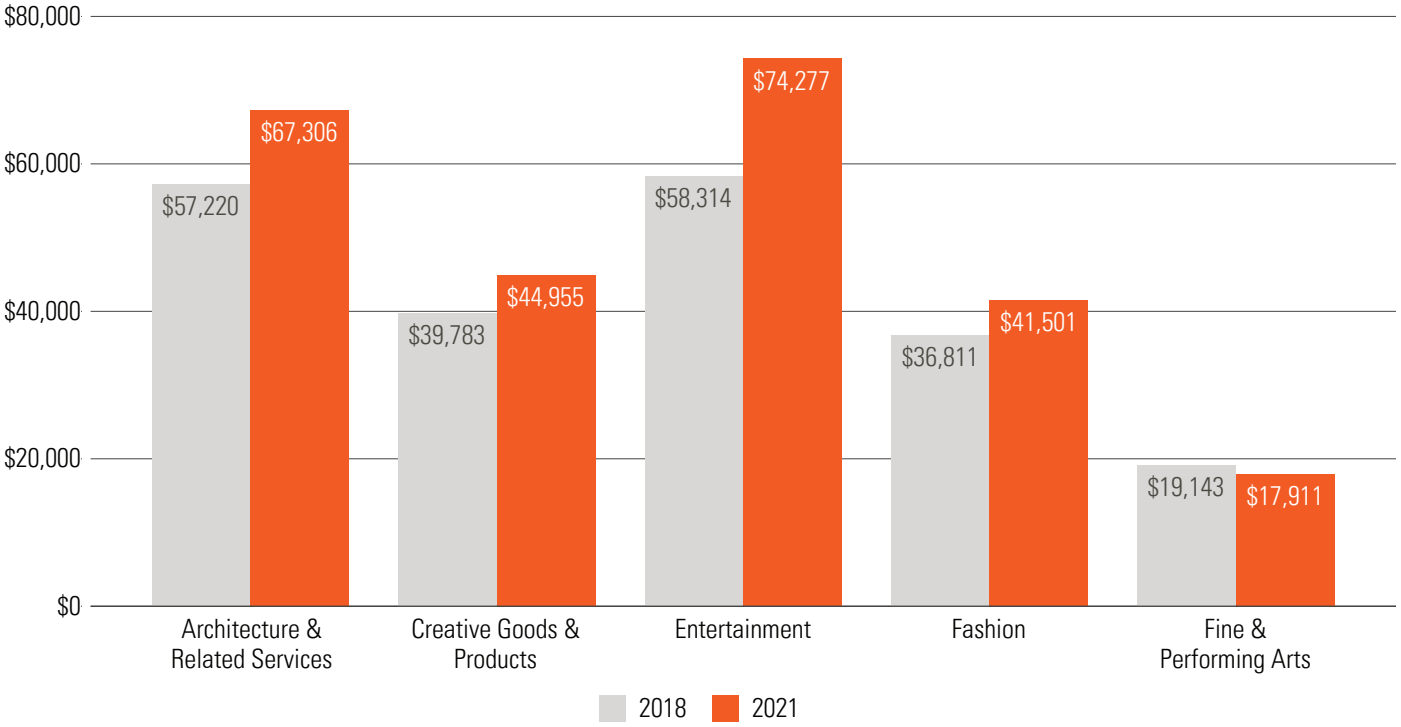
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R7.4: CREATIVE ECONOMY EMPLOYMENT BY CREATIVE SECTOR IN THE INLAND EMPIRE
2018 vs. 2021

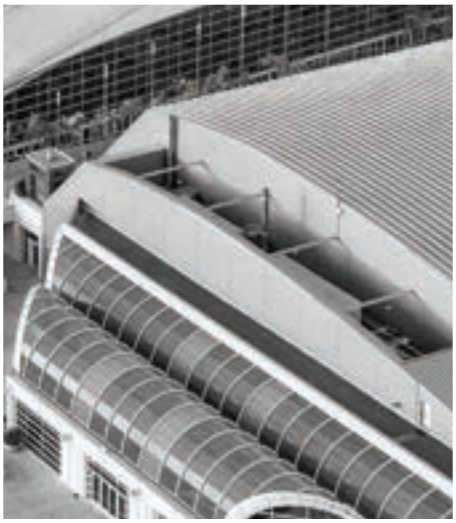


Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R7.5: ANNUAL WAGES BY CREATIVE SECTOR IN THE INLAND EMPIRE
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates



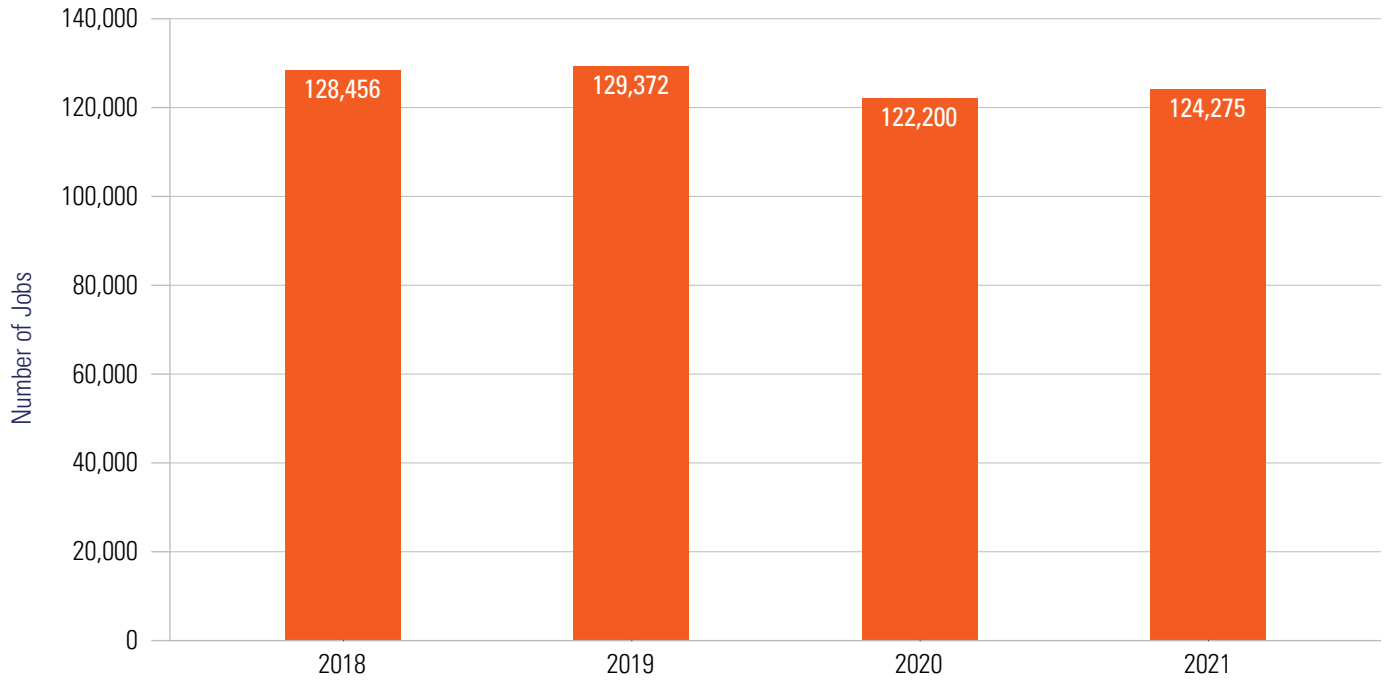
REGIONAL PROFILES

Region 8: The Southern Border Region

While the 124,300 people employed in the creative economy account for 6% of the region's total employment, creative economy employment trends roughly mirrored that of the overall economy in recent years. Both lost 6% of jobs between 2019 and 2020 and sit at about 3% below pre-pandemic levels in 2021. Entertainment is the largest creative sector, accounting for 50% of creative economy jobs, followed by Architecture & Related Services (27%) and Fine & Performing Arts (17%).

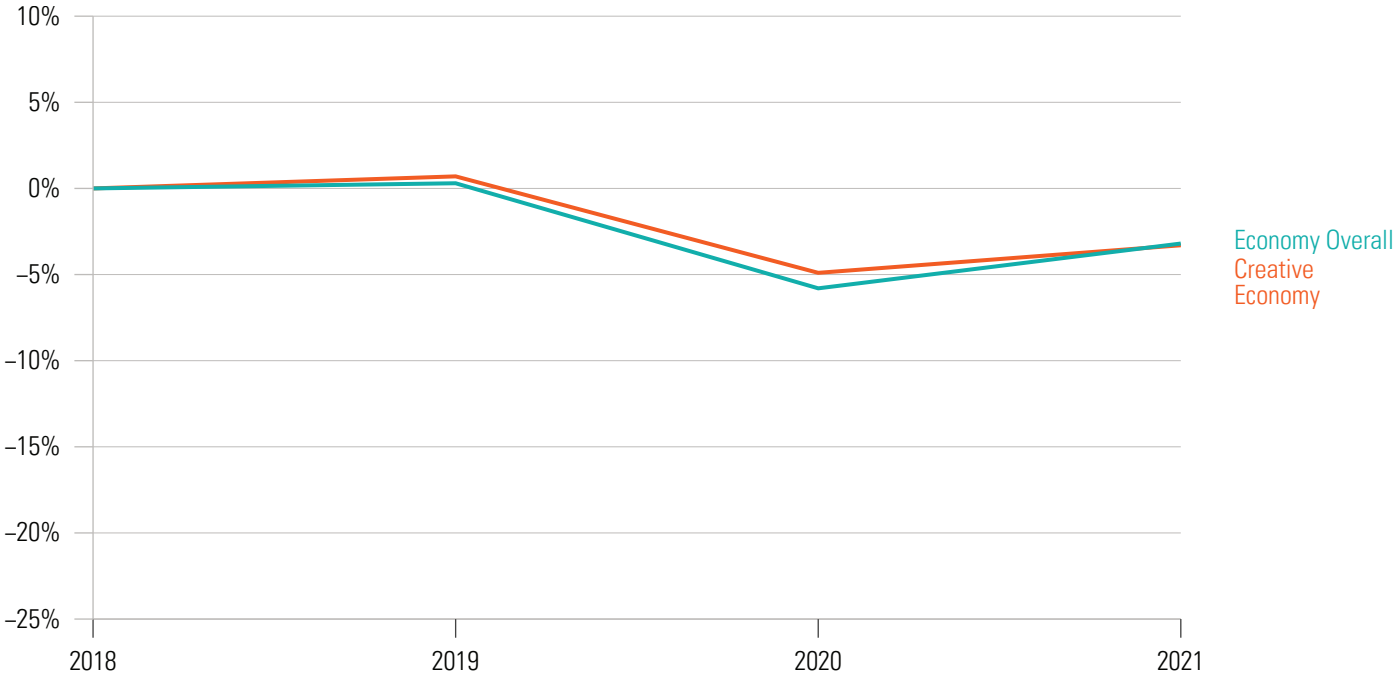
Entertainment and Fine & Performing Arts are the only sectors that declined between 2018 and 2021, losing 2% and 19% of jobs, respectively. Employment in the Architecture & Related Services and Creative Goods & Products sectors grew by about 6% each in this period, and Fashion remained relatively stagnant. Like in other regions, Entertainment is the highest-paying sector and it also experienced the highest wage growth between 2018 and 2021, increasing 23%. Fashion wages increased 20%, followed by wages in Architecture & Related Services (+12%) and Creative Goods & Products (+10%).

FIGURE R8.1: CREATIVE ECONOMY EMPLOYMENT IN THE SOUTHERN BORDER REGION
2018 to 2021



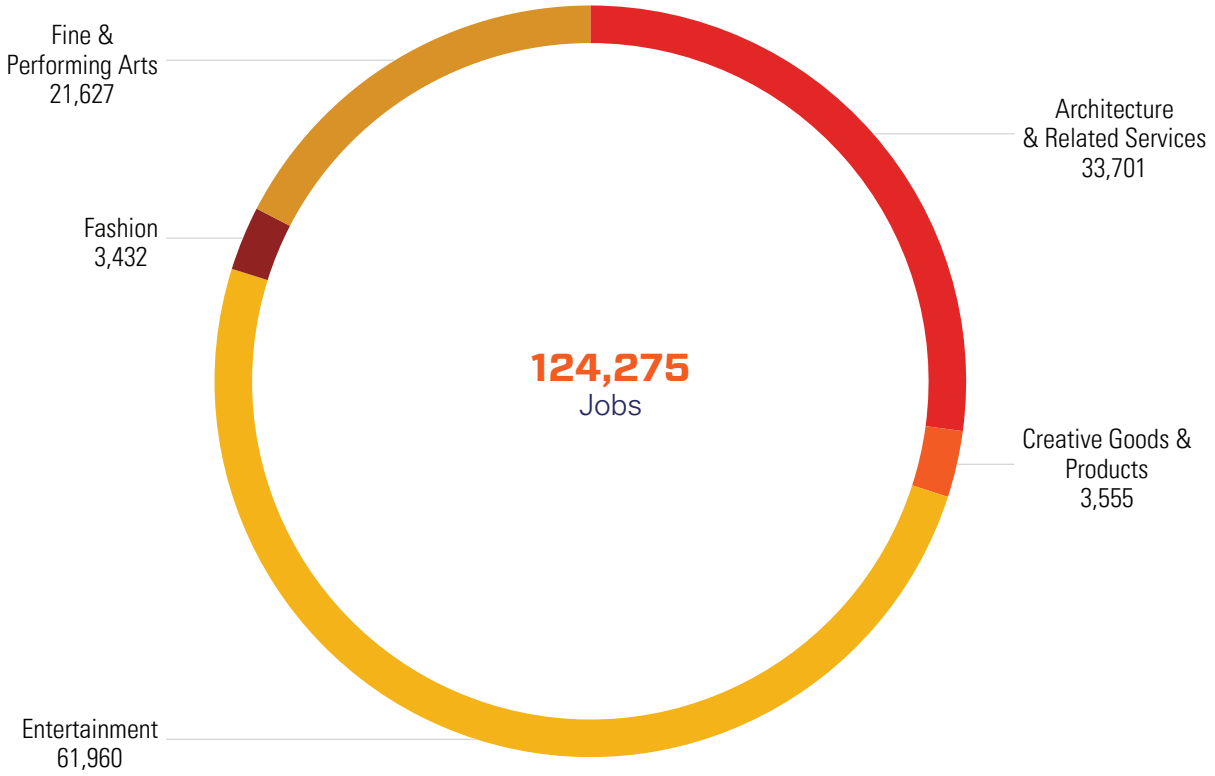
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R8.2: CREATIVE ECONOMY EMPLOYMENT GROWTH IN THE SOUTHERN BORDER REGION
2018 to 2021



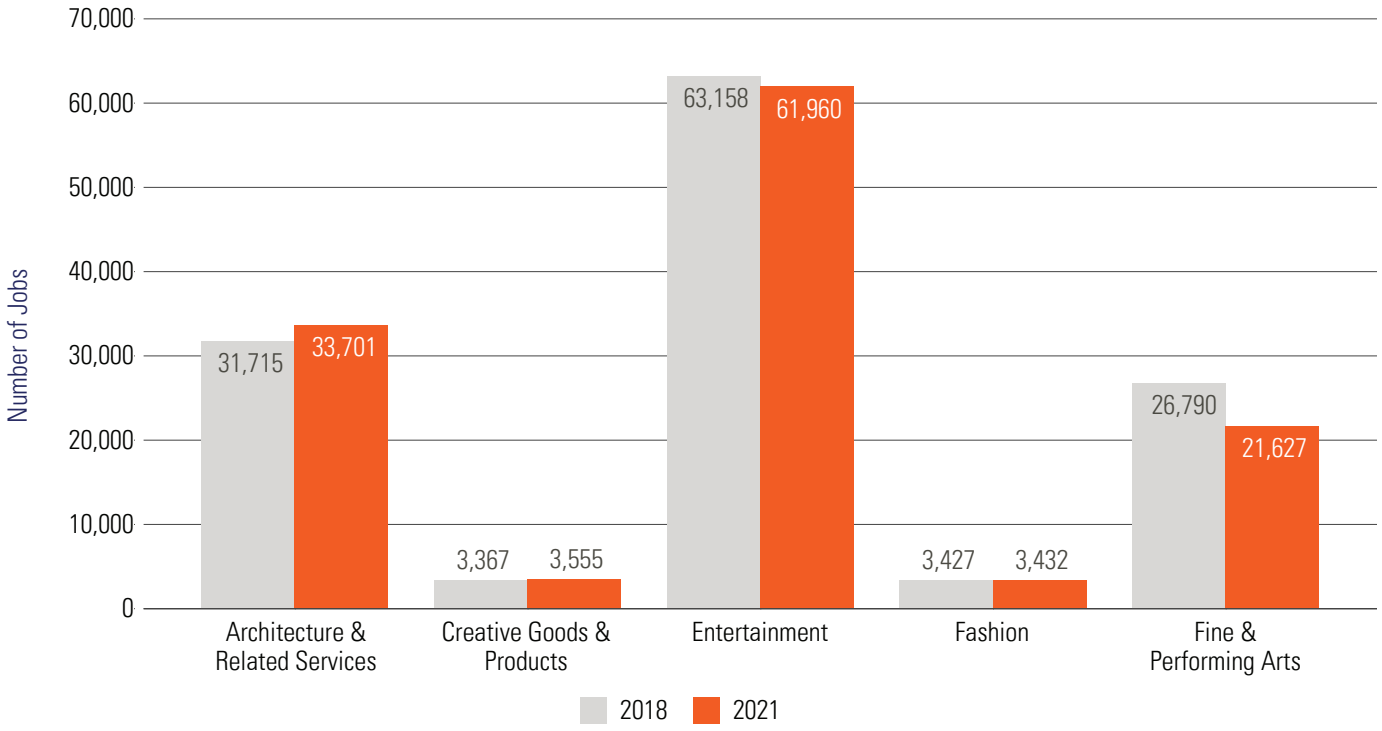
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R8.3: CREATIVE ECONOMY EMPLOYMENT SHARE BY CREATIVE SECTOR IN THE SOUTHERN BORDER REGION
2021



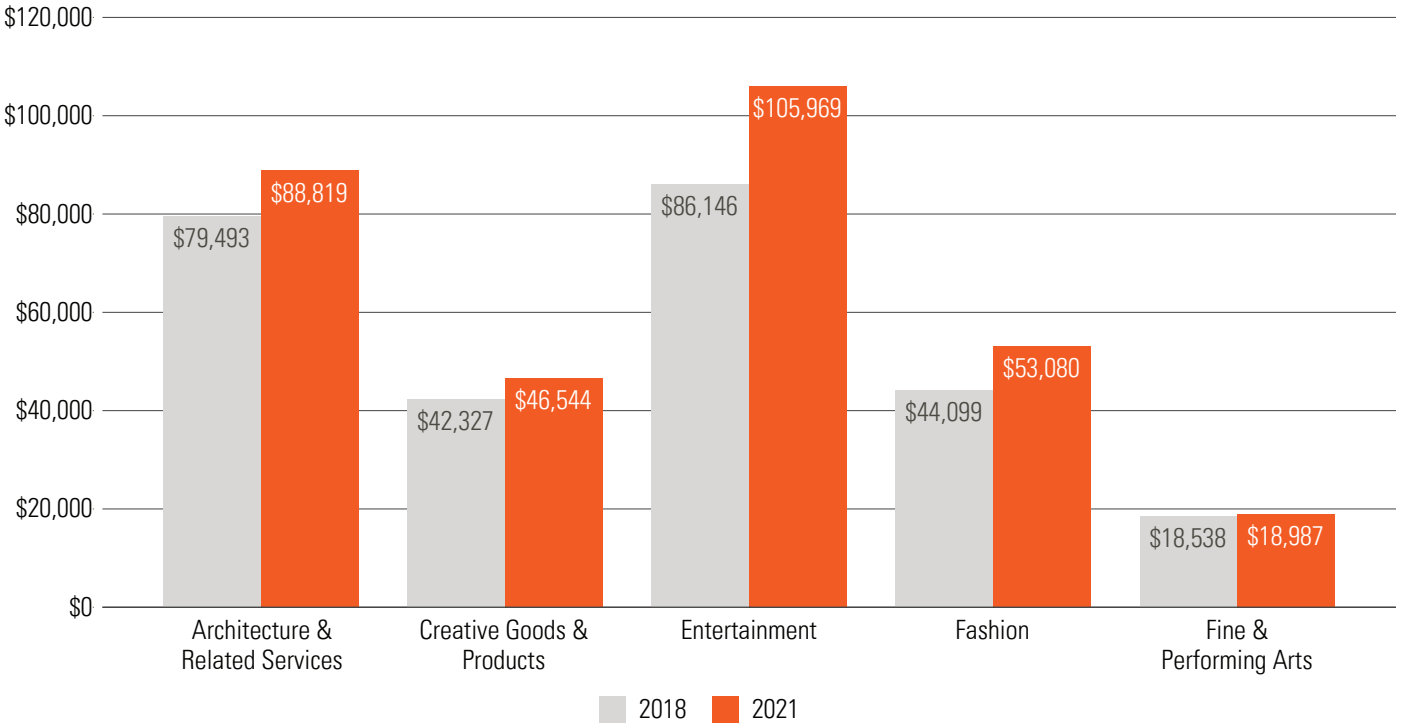
Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R8.4: CREATIVE ECONOMY EMPLOYMENT BY CREATIVE SECTOR IN THE SOUTHERN BORDER REGION
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

FIGURE R8.5: ANNUAL WAGES BY CREATIVE SECTOR IN THE SOUTHERN BORDER REGION
2018 vs. 2021



Source: U.S. Bureau of Labor Statistics Quarterly Census on Employment and Wages; U.S. Census American Community Survey 5-Year Estimates

APPENDIX

REVISIONS OF DATA SERIES ESTIMATES

Economic data are generally always under revision. It is important to remember that nearly all non-decennial census counts are estimates based on economic surveys—as no organization is asking every person in the country if they are employed. These data are revised and become more accurate over time. Because of the revision process, data can gradually show significant changes over time. Additionally, during periods of economic turbulence, revisions to indicators like GDP can be sizable.

Similarly, because data series change (e.g., benchmarks for industry spending patterns, import and exports, local industry and workforce characteristics evolve over time), it is not advisable to treat economic impact estimates from IMPLAN modeling as a time series.

REVISIONS OF INDUSTRY CATEGORIES

The Office of Management and Budget (OMB) periodically updates the NAICS Classification System; over the 16 years of this report, the classification system has been revised in 2007, 2012, and 2017. Although the classification system was revised again for 2022, the 2017 classification system was used for the current edition of the *Report*. In addition, the subsector "Independent Artists, Writers & Performers" was moved from Entertainment (previously called Entertainment and Digital Media) to Fine & Performing Arts. This change was made since the occupations captured by this subsector align more with those found in other Fine & Performing Arts subsectors as compared to those in Entertainment.

IMPLAN AND INPUT-OUTPUT MODELING

The Industry Economic Accounts produced by the Bureau of Economic Analysis (BEA) are a key foundational data source for all input-output models. The BEA's tables provide a summary of how industries produce and consume commodities at the national level. The economic impact analysis in this report utilizes IMPLAN economic impact software. IMPLAN is an input-output modeling system used to build economic models at various levels of geography. IMPLAN is widely used and recognized by government organizations, nonprofits, economic development organizations, workforce planners, education institutions, and consultants across the U.S. and Canada.

The creative economy (and creative industry groups) economic impact models are designed to capture industry relationships, consumer spending, and ripple effects that result from direct economic activity generated by the five creative industry groups in California and Los Angeles County. The economic impacts are reported as: direct impacts, indirect impacts, induced impacts, and gross tax receipts paid. All economic impact model data and outputs in the 2023 *Otis College Report on the Creative Economy* are reported in 2022 values.

Definitions of Creative Sectors and Subsectors

INDUSTRY GROUP 1: ENTERTAINMENT

Subsector 1.1: Print Publishing

511110 Newspaper Publishers
511120 Periodical Publishers
511130 Book Publishers
511191 Greeting Card Publishers
511199 All Other Publishers

Subsector 1.2: Digital Media

511210 Software Publishers
518210 Data Processing, Hosting, and Related Services
519130 Internet Publishing and Broadcasting and Web Search Portals
519110 News Syndicates
519120 Libraries and Archives
519190 All Other Information Services
541511 Custom Computer Programming Services
541512 Computer Systems Design Services
541921 Photography Studios, Portrait
541922 Commercial Photography

Subsector 1.3: Motion Picture and Video

512110 Motion Picture and Video Production
512120 Motion Picture and Video Distribution
512131 Motion Picture Theaters (except Drive-Ins)
512132 Drive-In Motion Picture Theaters
512191 Teleproduction and Other Postproduction Services
512199 Other Motion Picture and Video Industries

Subsector 1.4: Sound Recording

512230 Music Publishers
512240 Sound Recording Studios
512250 Record Production and Distribution
512290 Other Sound Recording Industries

Subsector 1.5: Cable and Broadcasting

515111 Radio Networks
515112 Radio Stations
515120 Television Broadcasting
515210 Cable and Other Subscription Programming

Subsector 1.6: Marketing, Advertising, and Public Relations

541810 Advertising Agencies
541820 Public Relations Agencies
541830 Media Buying Agencies
541840 Media Representatives
541890 Other Services Related to Advertising
541910 Marketing Research and Public Opinion Polling
711410 Agents and Managers for Artists, Athletes, Entertainers, and Other Public Figures

INDUSTRY GROUP 2: FINE & PERFORMING ARTS

Subsector 2.1: Fine Arts Schools

611610 Fine Arts Schools

Subsector 2.2: Performing Arts Companies

711110 Theater Companies and Dinner Theaters
711120 Dance Companies
711130 Musical Groups and Artists
711190 Other Performing Arts Companies

Subsector 2.3: Performing Arts and Live Event Promotion

711310 Promoters of Performing Arts, Sports, and Similar Events with Facilities
711320 Promoters of Performing Arts, Sports, and Similar Events without Facilities

Subsector 2.4: Museums, Galleries, and Historical Sites

453920 Art Dealers
712110 Museums
712120 Historical Sites

Subsector 2.5: Independent Artists, Writers, and Performers

711510 Independent Artists, Writers, and Performers

INDUSTRY GROUP 3: ARCHITECTURE & RELATED SERVICES

Subsector 3.1: Architectural Services

541310 Architectural Services

Subsector 3.2: Landscape Architectural Services

541320 Landscape Architectural Services

Subsector 3.3: Related Architectural Services

541330 Engineering Services
541340 Drafting Services
332323 Ornamental and Architectural Metal Work Manufacturing

Subsector 3.4: Specialized Design Services

541410 Interior Design Services
541420 Industrial Design Services
541430 Graphic Design Services
541490 Other Specialized Design Services

INDUSTRY GROUP 4: CREATIVE GOODS & PRODUCTS

Subsector 4.1: Print Production

323113 Commercial Screen Printing
323117 Books Printing
323120 Support Activities for Printing

Subsector 4.2: Glassware, Metalware, and Ceramic Goods

327110 Pottery, Ceramics, and Plumbing Fixture Manufacturing
327212 Other Pressed and Blown Glass and Glassware Manufacturing
332215 Metal Kitchen Cookware, Utensil, Cutlery, and Flatware (except Precious) Manufacturing

Subsector 4.3: Furniture

337121 Upholstered Household Furniture Manufacturing
337122 Nonupholstered Wood Household Furniture Manufacturing
337124 Metal Household Furniture Manufacturing
337125 Household Furniture (except Wood and Metal) Manufacturing
337211 Wood Office Furniture Manufacturing
337212 Custom Architectural Woodwork and Millwork Manufacturing
337214 Office Furniture (except Wood) Manufacturing
811420 Reupholstery and Furniture Repair

Subsector 4.4: Dolls, Toys, and Games

339930 Doll, Toy, and Game Manufacturing

Subsector 4.5: Musical Instruments

339992 Musical Instrument Manufacturing

INDUSTRY GROUP 5: FASHION

Subsector 5.1: Textiles and Fabrics

313210 Broadwoven Fabric Mills
313220 Narrow Fabric Mills and Schiffli Machine Embroidery
313310 Textile and Fabric Finishing Mills
314910 Textile Bag and Canvas Mills

Subsector 5.2: Apparel

315110 Hosiery and Sock Mills
315190 Other Apparel Knitting Mills
315210 Cut and Sew Apparel Contractors
315220 Men's and Boys' Cut and Sew Apparel Manufacturing
315240 Women's, Girls', and Infants' Cut and Sew Apparel Manufacturing
315280 Other Cut and Sew Apparel Manufacturing
315990 Apparel Accessories and Other Apparel Manufacturing

Subsector 5.3: Leather Goods

316110 Leather and Hide Tanning and Finishing
316210 Footwear Manufacturing
316992 Women's Handbag and Purse Manufacturing
316998 All Other Leather Good and Allied Product Manufacturing
811430 Footwear and Leather Goods Repair

Subsector 5.4: Jewelry and Personal Goods

339910 Jewelry and Silverware Manufacturing

Subsector 5.5 Cosmetics

325620 Toilet Preparation Manufacturing

ECONOMIC IMPACT OF THE CREATIVE ECONOMY IN CALIFORNIA AND LOS ANGELES COUNTY 2021

(A) CALIFORNIA

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	1,831,323 Jobs	1,504,383 Jobs	1,810,575 Jobs	5,146,281 Jobs
Labor Income	$295.4 Billion	$153.6 Billion	$132.6 Billion	$581.7 Billion
Gross Value Added	$507.4 Billion	$236.9 Billion	$234.4 Billion	$978.6 Billion
Tax Revenue	-	-	-	$194.1 Billion

(B) LOS ANGELES COUNTY

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	685,363 Jobs	425,420 Jobs	413,009 Jobs	1,523,793 Jobs
Labor Income	$86.0 Billion	$40.3 Billion	$28.2 Billion	$154.5 Billion
Gross Value Added	$161.0 Billion	$66.3 Billion	$50.1 Billion	$277.4 Billion
Tax Revenue	-	-	-	$50.2 Billion

Note: Results reported in 2022 dollars. Direct contributions comprise the value-added output generated by firms, labor income, and taxes on production for a given creative sector. Indirect contributions reflect the employment and GRP contribution made by the suppliers of those establishments in the sector and, in turn, within the supply chains of those suppliers. Induced contributions estimate the economic activity supported by the consumer spending of wages by those employed directly by the creative sectors or those in their supply chains.

ECONOMIC IMPACT OF THE ENTERTAINMENT SECTOR IN CALIFORNIA AND LOS ANGELES COUNTY 2021

(A) CALIFORNIA

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	1,127,268 Jobs	1,275,602 Jobs	1,512,168 Jobs	3,915,039 Jobs
Labor Income	$240.3 Billion	$134.7 Billion	$110.8 Billion	$485.7 Billion
Gross Value Added	$413.6 Billion	$208.6 Billion	$195.8 Billion	$818.0 Billion
Tax Revenue	-	-	-	$164.1 Billion

(B) LOS ANGELES COUNTY

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	367,294 Jobs	334,822 Jobs	306,161 Jobs	1,008,277 Jobs
Labor Income	$60.5 Billion	$33.0 Billion	$20.9 Billion	$114.4 Billion
Gross Value Added	$113.2 Billion	$55.4 Billion	$37.1 Billion	$205.7 Billion
Tax Revenue	-	-	-	$38.1 Billion

Note: Results reported in 2022 dollars. Direct contributions comprise the value-added output generated by firms, labor income, and taxes on production for a given creative sector. Indirect contributions reflect the employment and GRP contribution made by the suppliers of those establishments in the sector and, in turn, within the supply chains of those suppliers. Induced contributions estimate the economic activity supported by the consumer spending of wages by those employed directly by the creative sectors or those in their supply chains.

ECONOMIC IMPACT OF THE FINE & PERFORMING ARTS SECTOR IN CALIFORNIA AND LOS ANGELES COUNTY 2021

(A) CALIFORNIA

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	314,314 Jobs	83,201 Jobs	89,240 Jobs	486,755 Jobs
Labor Income	$16.4 Billion	$5.8 Billion	$6.5 Billion	$28.8 Billion
Gross Value Added	$34.9 Billion	$8.7 Billion	$11.5 Billion	$55.2 Billion
Tax Revenue	-	-	-	$7.8 Billion

(B) LOS ANGELES COUNTY

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	165,095 Jobs	39,156 Jobs	45,260 Jobs	249,511 Jobs
Labor Income	$11.0 Billion	$3.0 Billion	$3.1 Billion	$17.0 Billion
Gross Value Added	$23.7 Billion	$4.5 Billion	$5.5 Billion	$33.7 Billion
Tax Revenue	-	-	-	$4.7 Billion

Note: Results reported in 2022 dollars. Direct contributions comprise the value-added output generated by firms, labor income, and taxes on production for a given creative sector. Indirect contributions reflect the employment and GRP contribution made by the suppliers of those establishments in the sector and, in turn, within the supply chains of those suppliers. Induced contributions estimate the economic activity supported by the consumer spending of wages by those employed directly by the creative sectors or those in their supply chains.

ECONOMIC IMPACT OF THE ARCHITECTURE & RELATED SERVICES SECTOR IN CALIFORNIA AND LOS ANGELES COUNTY 2021

(A) CALIFORNIA

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	284,776 Jobs	100,982 Jobs	161,360 Jobs	547,119 Jobs
Labor Income	$31.1 Billion	$8.9 Billion	$11.8 Billion	$51.8 Billion
Gross Value Added	$43.2 Billion	$12.8 Billion	$20.9 Billion	$76.9 Billion
Tax Revenue	-	-	-	$16.4 Billion

(B) LOS ANGELES COUNTY

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	98,300 Jobs	32,810 Jobs	43,022 Jobs	174,132 Jobs
Labor Income	$10.4 Billion	$2.7 Billion	$2.9 Billion	$16.0 Billion
Gross Value Added	$16.1 Billion	$3.8 Billion	$5.2 Billion	$25.1 Billion
Tax Revenue	-	-	-	$5.0 Billion

Note: Results reported in 2022 dollars. Direct contributions comprise the value-added output generated by firms, labor income, and taxes on production for a given creative sector. Indirect contributions reflect the employment and GRP contribution made by the suppliers of those establishments in the sector and, in turn, within the supply chains of those suppliers. Induced contributions estimate the economic activity supported by the consumer spending of wages by those employed directly by the creative sectors or those in their supply chains.

ECONOMIC IMPACT OF THE CREATIVE GOODS & PRODUCTS SECTOR IN CALIFORNIA AND LOS ANGELES COUNTY 2021

(A) CALIFORNIA

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	42,293 Jobs	15,745 Jobs	18,524 Jobs	76,563 Jobs
Labor Income	$3.1 Billion	$1.5 Billion	$1.4 Billion	$6.0 Billion
Gross Value Added	$4.3 Billion	$2.4 Billion	$2.4 Billion	$9.1 Billion
Tax Revenue	-	-	-	$2.0 Billion

(B) LOS ANGELES COUNTY

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	14,797 Jobs	4,599 Jobs	5,599 Jobs	24,995 Jobs
Labor Income	$1.3 Billion	$0.4 Billion	$0.4 Billion	$2.1 Billion
Gross Value Added	$1.8 Billion	$0.7 Billion	$0.7 Billion	$3.2 Billion
Tax Revenue	-	-	-	$0.7 Billion

Note: Results reported in 2022 dollars. Direct contributions comprise the value-added output generated by firms, labor income, and taxes on production for a given creative sector. Indirect contributions reflect the employment and GRP contribution made by the suppliers of those establishments in the sector and, in turn, within the supply chains of those suppliers. Induced contributions estimate the economic activity supported by the consumer spending of wages by those employed directly by the creative sectors or those in their supply chains.

ECONOMIC IMPACT OF THE FASHION SECTOR IN CALIFORNIA AND LOS ANGELES COUNTY 2021

(A) CALIFORNIA

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	62,671 Jobs	28,852 Jobs	29,283 Jobs	120,806 Jobs
Labor Income	$4.5 Billion	$2.7 Billion	$2.1 Billion	$9.4 Billion
Gross Value Added	$11.3 Billion	$4.3 Billion	$3.8 Billion	$19.5 Billion
Tax Revenue	-	-	-	$3.7 Billion

(B) LOS ANGELES COUNTY

	DIRECT	INDIRECT	INDUCED	TOTAL
Employment	39,878 Jobs	14,033 Jobs	12,967 Jobs	66,878 Jobs
Labor Income	$2.8 Billion	$1.2 Billion	$0.9 Billion	$4.9 Billion
Gross Value Added	$6.2 Billion	$1.9 Billion	$1.6 Billion	$9.7 Billion
Tax Revenue	-	-	-	$1.8 Billion

Note: Results reported in 2022 dollars. Direct contributions comprise the value-added output generated by firms, labor income, and taxes on production for a given creative sector. Indirect contributions reflect the employment and GRP contribution made by the suppliers of those establishments in the sector and, in turn, within the supply chains of those suppliers. Induced contributions estimate the economic activity supported by the consumer spending of wages by those employed directly by the creative sectors or those in their supply chains.

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