

Arts and Cultural Production Satellite Account

State Employment and Compensation in 2014

By Elizabeth P. Cologer and Mauricio Ortiz

ON APRIL 19th, 2017, the Bureau of Economic Analysis (BEA) released—for the first time—estimates of state-level employment and compensation as part of its Arts and Cultural Production Satellite Account. State-level estimates are now available for all 50 states and the District of Columbia for 2001 to 2014. This is BEA’s first satellite account to provide subnational statistics, adding regional nuance to the more expansive national data available.

This article provides an overview of BEA satellite accounts. It discusses source data and methodology for the arts and cultural production satellite account, offers a look at its statistics for specific industries, and notes some important next steps.

Arts and cultural employment nationwide grew 1.3 percent in 2014, the same pace reported for 2013 (chart 1). The total number of arts and culture jobs was 4.80 million in 2014 (chart 2), accounting for 3.3 percent of all jobs in the United States. The state-level statistics show that 24 states had employment growth in arts and cultural industries in 2014.

Compensation in arts and cultural industries grew 5.0 percent in 2014 (chart 3), accounting for 3.8 percent of U.S. compensation. The average compensation per job was \$73,959 in 2014, an increase of 3.7 percent

over 2013 (chart 4, page 2). Forty-nine states showed average compensation growth in arts and cultural industries in 2014.

Chart 2. Employment in the Arts and Cultural Production Industries

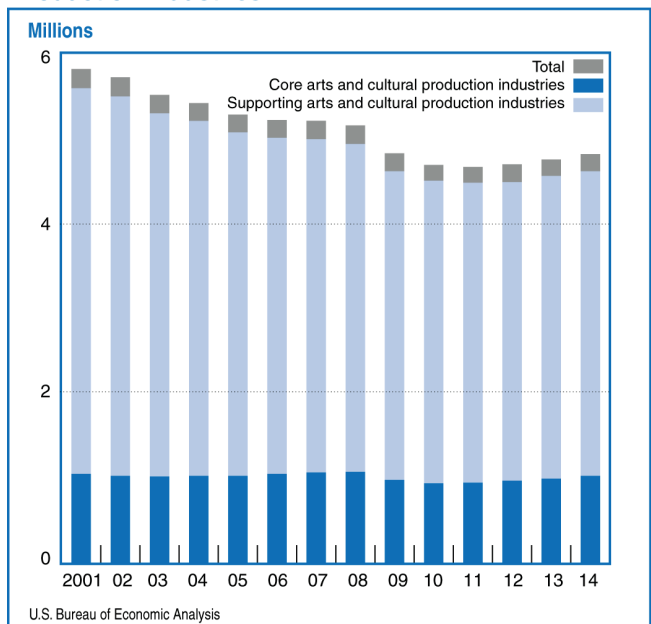


Chart 1. Growth in Employment in the Arts and Cultural Production Industries

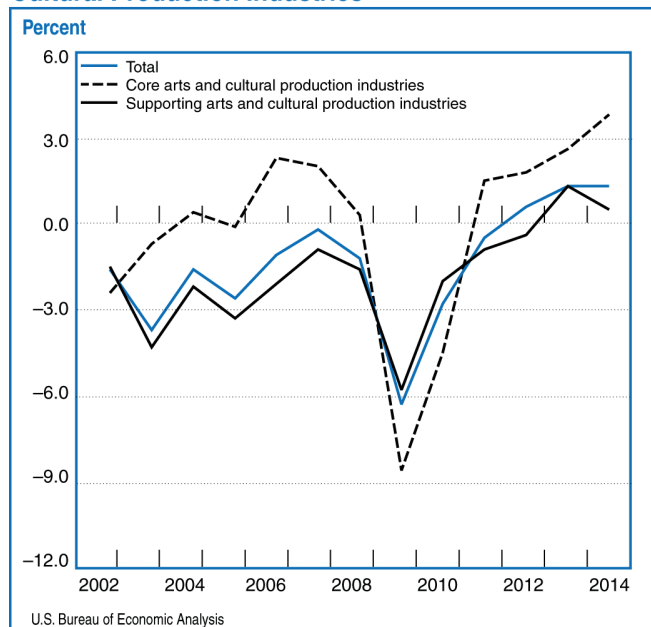


Chart 3. Growth in Compensation in the Arts and Cultural Production Industries

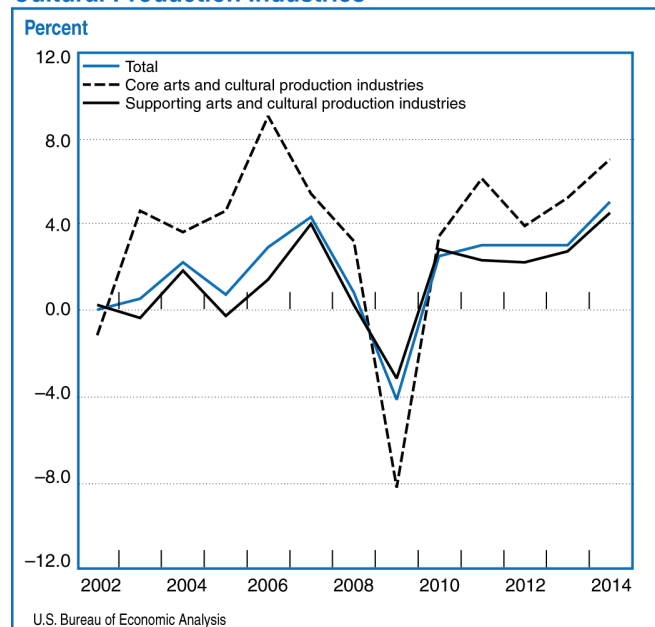
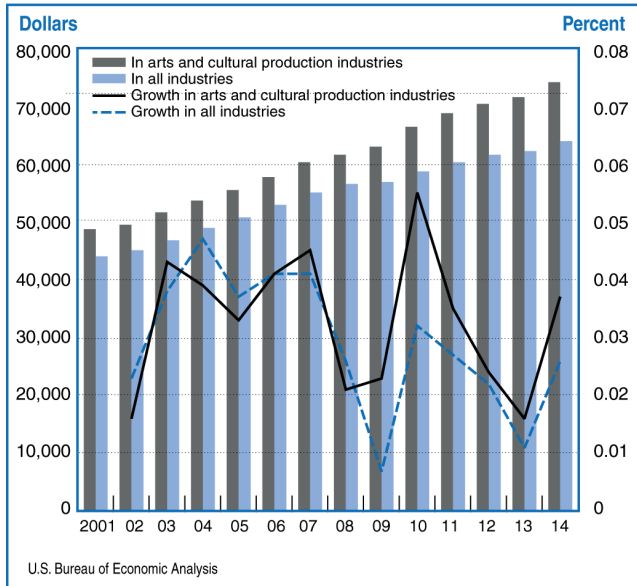


Chart 4. Average Compensation of Employees Per Job and Growth in Average Compensation



Overview

BEA's satellite accounts are designed to measure economic activity within an economic sector that is not explicitly defined as an industry in the national accounts. These accounts are statistical frameworks that expand the analytical capacity of the national income and product accounts and the input-output (I-O) accounts by focusing on a particular aspect of economic activity. Although they provide flexibility in defining a sector of interest, the framework for measuring economic activity in the satellite accounts is consistent with the national accounts.

BEA currently produces satellite accounts for several sectors, including travel and tourism, health care, and arts and cultural production. A prototype Arts and Cultural Production Satellite Account was first produced for the United States in 2013. Official national statistics for this account were published for 1998–2012 in January 2015.

The definition of arts and cultural production used by BEA is largely consistent with the United Nations' definition. It measures creative artistic activity, the goods and services produced by such activity, the goods and services produced in support of such activity, and the construction of the buildings in which artistic activity takes place. To construct this satellite account, BEA used detailed data on economic transactions from the benchmark I-O accounts to identify what constitutes art and cultural economic activity.¹

The industry statistics are presented in two broad categories: (1) core arts and cultural production and (2) supporting arts and cultural production. These categories come from the definitions created by BEA with input from the National Endowment for the Arts. The core category includes the commodities in which output is identified as primarily contributing to arts and culture; it includes performing arts, museums, design services, and arts education. The supporting category consists of the commodities that support the core category through publication, dissemination of the creative process, or other supportive functions; for example, it includes event promotion, printing, and broadcasting.² To understand the difference between the core industries and the supporting industries, consider a concert by a musical group, viewed live by an audience and digitally recorded for later dissemination. The composition of the music and the musical group performing the concert would be part of the core industries, but the recording of the concert, the production of the resulting digitized music, the selling of tickets to the event, the publication of the program, and even the construction of the facility that the concert takes place in are part of the supporting industries.

State Employment and Compensation Methodology

National employment and compensation statistics are derived by applying the arts and cultural production share of total industry output to total industry employment and compensation. At the state level, arts and cultural production statistics for employment and compensation use the same methodology that BEA uses for its state total employment and compensation statistics. The primary data source used is the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS). First, a mapping of arts and cultural industries to six-digit North American Industry Classification System (NAICS) codes was developed. After the NAICS six-digit industries were identified, state-level aggregations of specific QCEW industries were prepared. The national arts and cultural production industry totals for employment and compensation were then allocated to states based on these state distributions for each year in the series.

The QCEW provides administrative record data for wages and salary employment. The wage data were combined with estimates of supplements to wages to develop compensation at the arts and cultural production industry level. The employment figures in the QCEW give equal weight to full-time and part-time

1. Paul V. Kern, David B. Wasshausen, Steven L. Zemanek, "The Arts and Cultural Production Satellite Account" (abstract, 22nd International Input-Output Conference, July 1–18, 2014, Lisbon, Portugal).

2. Paul V. Kern, David B. Wasshausen, Steven L. Zemanek, "BEA Briefing: U.S. Arts and Cultural Production Satellite Account, 1998–2012," SURVEY OF CURRENT BUSINESS (January 2015).

jobs in its estimates. Unpaid family workers, proprietors, and volunteers are not counted in the employment figures.

For a few arts and cultural industries, additional data were incorporated to more accurately measure the state-specific arts and culture component. The education services industry was one where additional data were used. QCEW six-digit NAICS data do not provide enough granular detail to appropriately identify the arts and cultural components of elementary and secondary education. Additional information obtained from the National Center of Education Statistics at the Department of Education and from the Occupational Employment Statistics survey from the Department of Labor were used to supplement and zero in on the arts and culture portion of elementary and secondary education.

Construction data from Dodge Data and Analytics for constructions starts and put-in-place value at the state level were used to isolate projects related to art and cultural production construction. The Dodge data allowed BEA to look at specific arts and cultural construction, including the building and renovation of parks, theaters, schools, and libraries. The Dodge data were used to compute state-level ratios of arts related construction to overall construction. These ratios were then used to adjust the QCEW construction industry distribution for all states, before allocating to the arts and cultural production totals for the construction industry.

The government sector in the arts and cultural industries includes federal as well as state and local governments. It includes state and local education, government run parks and museums, and local libraries. The methodologies to incorporate additional data sources that were used for the construction and education industries were also used for the government sector. Subcategories such as education, museums, other information services (which includes public libraries), construction, and all other government were allocated to national totals before being summed together to create a government estimate. This allowed state-level variations in the concentration of particular industries within government to be better represented in the total government figures for each state.

Employment and Compensation

There were 1.02 million jobs in core arts and cultural industries in 2014 (table 1). Growth across all states ranged from a low of -5.8 percent in Montana to a high of 5.7 percent in Washington (chart 5, page 4). Performing arts and design services accounted for 73.1 percent of all employment in core industries. In addition, there were 3.58 million jobs in supporting arts

and cultural industries. Art support services and information services accounted for 66.3 percent of employment in these industries. Government, the largest industry in art support services, accounted for 1.12 million employees.

Average compensation growth across all states ranged from a low of -1.8 percent in Idaho to a high of 8.5 percent in New Hampshire (chart 6, page 5). The average compensation for an employee in the core industries was \$70,803 (table 1). The average compensation for an employee in the supporting industries was \$75,390.

Table 1. Employment and Average Compensation of Employees Per Job by Industry, 2014

Industries in the arts and cultural production satellite account	Employment	Compensation (millions of dollars)	Average compensation (dollars)
Total	4,802,813	355,213	73,959
Core arts and cultural production	1,023,812	72,489	70,803
Performing arts	259,606	18,909	72,837
Performing arts companies	103,911	7,920	76,219
Promoters of performing arts and similar events	92,408	2,943	31,848
Agents/managers for artists	23,889	1,319	55,214
Independent artists, writers, and performers	39,398	6,728	170,770
Museums	129,599	4,028	31,080
Design services	488,583	42,109	86,186
Advertising	146,395	13,049	89,136
Architectural services	110,115	11,889	107,969
Landscape architectural services	23,256	2,247	96,620
Interior design services	22,067	1,873	84,878
Industrial design services	28,230	1,128	39,957
Graphic design services	62,609	4,072	65,039
Computer systems design	19,837	2,817	142,007
Photography and photofinishing services	73,633	4,545	61,725
All other design services	2,441	489	200,328
Fine arts education	49,592	3,133	63,176
Education services	96,432	4,309	44,684
Supporting arts and cultural production	3,578,839	269,809	75,390
Art support services	1,193,517	86,284	72,294
Rental and leasing	37,858	1,390	36,716
Grant-making and giving services	6,010	412	68,552
Unions	21,932	1,206	54,988
Government	1,124,098	82,981	73,820
Other support services	3,619	295	81,514
Information services	1,178,134	126,238	107,151
Publishing	327,004	41,518	126,965
Motion pictures	374,162	29,351	78,445
Sound recording	12,605	2,514	199,445
Broadcasting	410,178	35,459	86,448
Other information services	54,185	17,395	321,030
Manufacturing	174,804	10,429	59,661
Jewelry and silverware manufacturing	25,864	1,555	60,122
Printed goods manufacturing	92,037	5,266	57,216
Musical instruments manufacturing	8,471	712	84,051
Custom architectural woodwork and metalwork manufacturing	30,194	1,441	47,725
Camera and motion picture equipment manufacturing	258	11	42,636
Other goods manufacturing	17,980	1,445	80,367
Construction	100,222	5,809	57,961
Wholesale and transportation industries	191,285	14,877	77,774
Retail industries	740,877	26,172	35,326
All other industries	200,162	12,916	64,528

Employment and compensation in arts and cultural industries vary widely across states and industries. A location quotient (LQ) allows users to compare state concentrations of industries with the concentrations for the entire country.³ Fifteen states and the District of Columbia have a higher concentration of employment than the United States (chart 7, page 6). Nine states and the District of Columbia have a higher concentration of compensation than the United States (chart 8, page 6).

The remainder of this article highlights arts and cultural production in three industries: government, sound recording, and manufacturing.

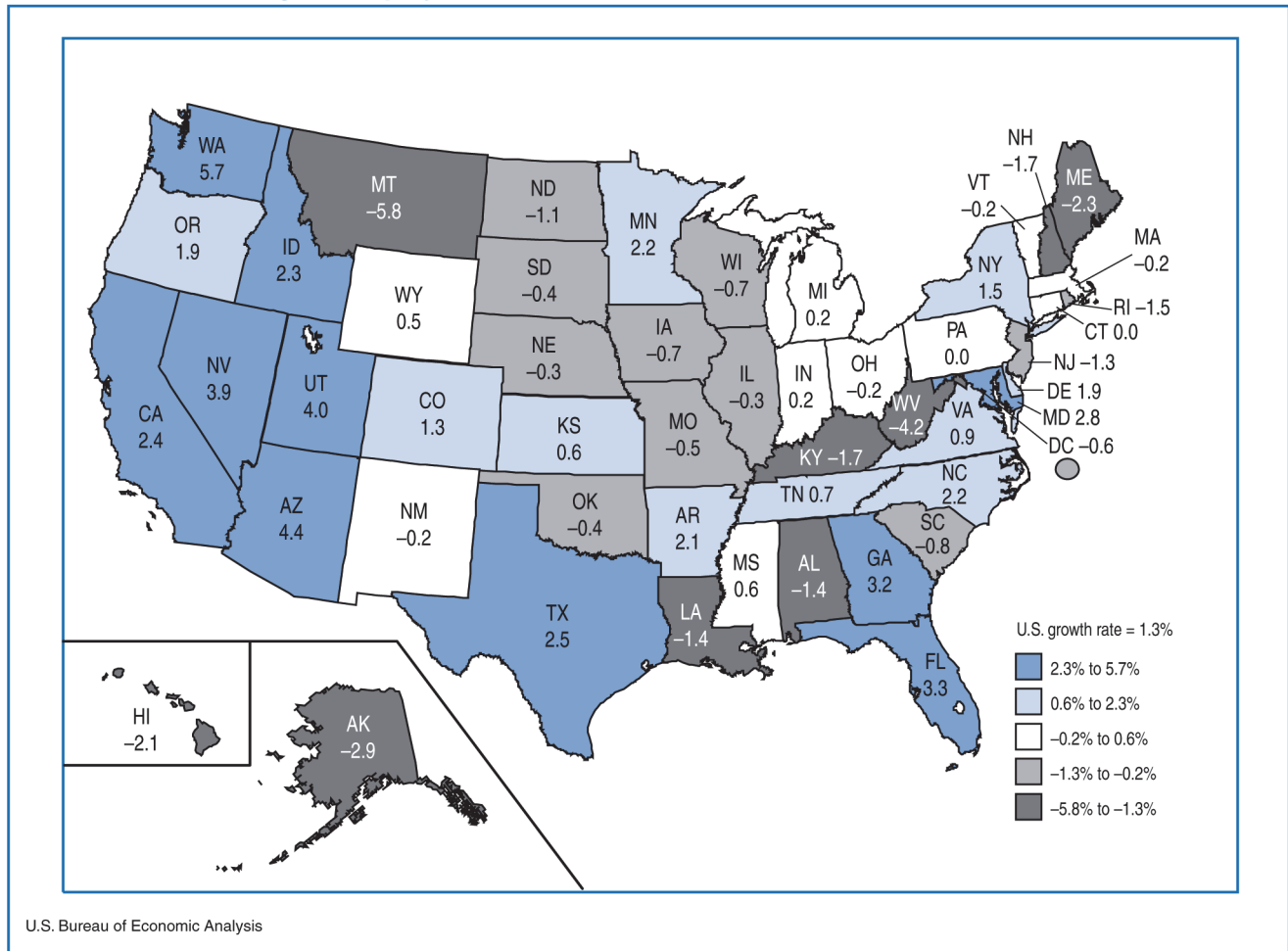
3. A location quotient (LQ) measures an industry's concentration of employment or compensation relative to the U.S. industry's share. An LQ is computed as an industry's share of a regional total divided by the industry's share of the national total for the same statistic. An employment LQ of 1.2 indicates that the state's employment in the industry is 20 percent greater than the industry's national employment share. An employment LQ of 0.8 indicates that the state's employment in the industry is 20 percent below the industry's national employment share.

Government

Government accounted for 1.12 million jobs in 2014 (table 1). It is the largest arts and cultural industry in terms of employment in 44 states and the District of Columbia. In the District of Columbia, more than 50 percent of arts and cultural employment is in the government sector (table 2, page 7). More than half of this employment is accounted for by museums, zoos, botanical gardens, historical sites, nature parks, and similar institutions. This is expected since employees of the Smithsonian Institute and the National Park Service are federal government employees. Another approximately 25 percent of this employment is accounted for by government information services, which includes the Library of Congress and the National Archives.

In Wyoming, government employment account for more than half of total employment; national parks contribute a large portion of the government employees. In contrast, government employment in California and Florida account for less than 20 percent of

Chart 5. Percent Change in Employment in the Arts and Cultural Industries, 2013–2014



employment in arts and cultural industries; employment in these states are primarily in the private sector.

Sound recording

Sound recording accounting for 12,605 thousand jobs in 2014 (table 1, page 3). Although California and New York are typically associated with the sound recording industry, Tennessee has the highest LQ (6.48) for employment in the sound recording industry (table 3, page 7). This comes as no surprise to country music fans or to those who know that Nashville’s nickname is “Music City.” New York and California—with LQs of 3.09 and 1.91, respectively—also have a greater concentration of employment than the United States in the sound recording industry. With a LQ of 1.86, ranking fourth, the concentration of employment in Nevada is only slightly below that in California. Average compensation per job in the sound recording industry in all four states was above \$135,000 in 2014, with New York leading the way at \$269,068.

Manufacturing

Manufacturing accounted for 174,804 thousand jobs in 2014 (table 1, page 3). Several manufacturing industries contribute to arts and cultural production. These include the jewelry and silverware manufacturing industry, the musical instrument manufacturing industry, the custom architectural woodwork and metalwork manufacturing industry, and the printed goods manufacturing industry as well as others. In New Mexico, 71 percent of these manufacturing jobs are in the jewelry and silverware manufacturing industry. In South Dakota, jewelry and silverware manufacturing accounts for one-third of arts and cultural manufacturing jobs (table 4, page 7). Both of these states are known for their Native American silver production. In New Mexico, the LQ of employment in all manufacturing industries is 1.24, indicating that the concentration of employment in arts and cultural manufacturing is 24 percent higher than in the United States as a whole. Employment in jewelry and manufacturing has an LQ

Chart 6. Percent Change in Average Compensation of Employees Per Job in the Arts and Cultural Industries, 2013–2014

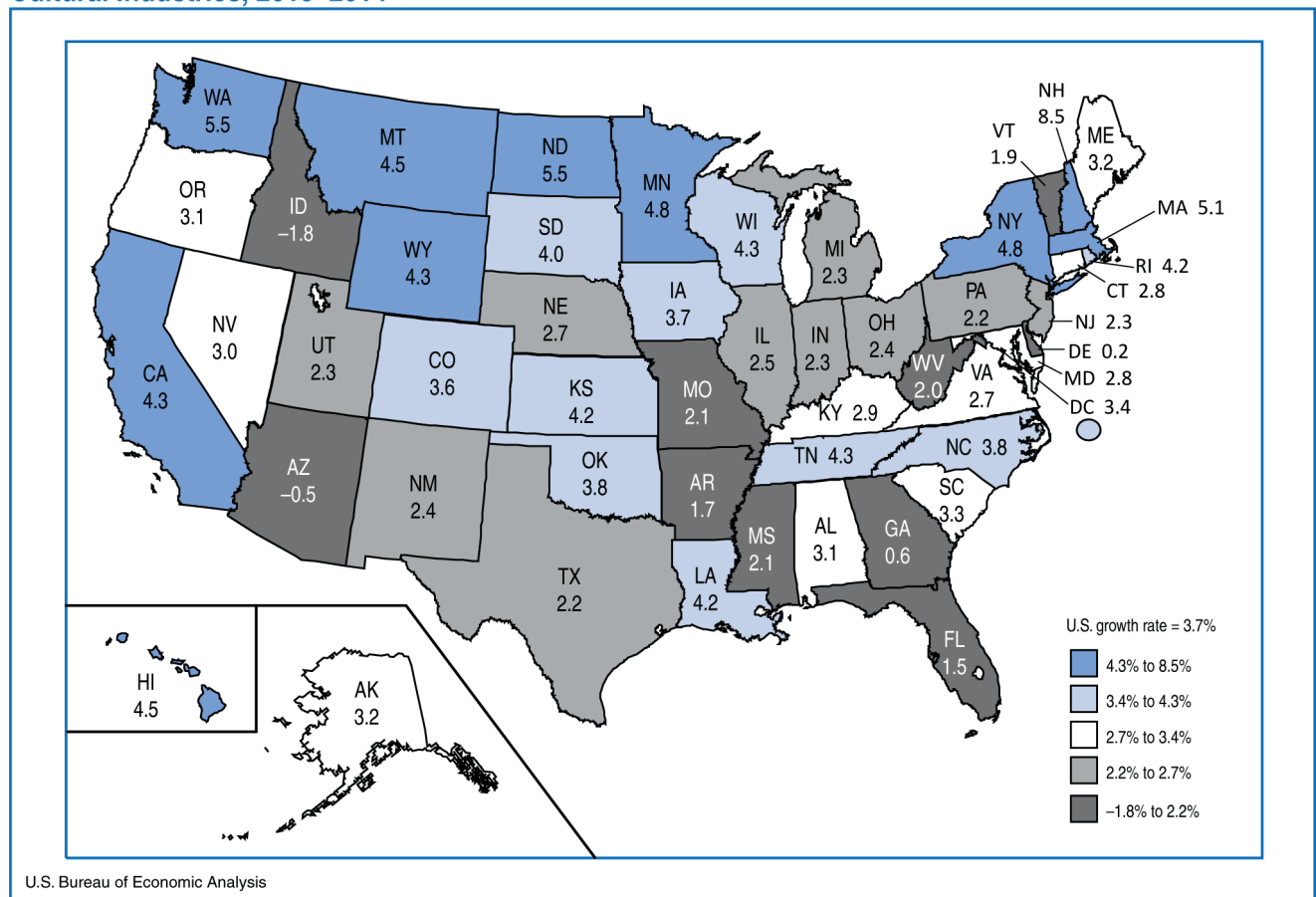
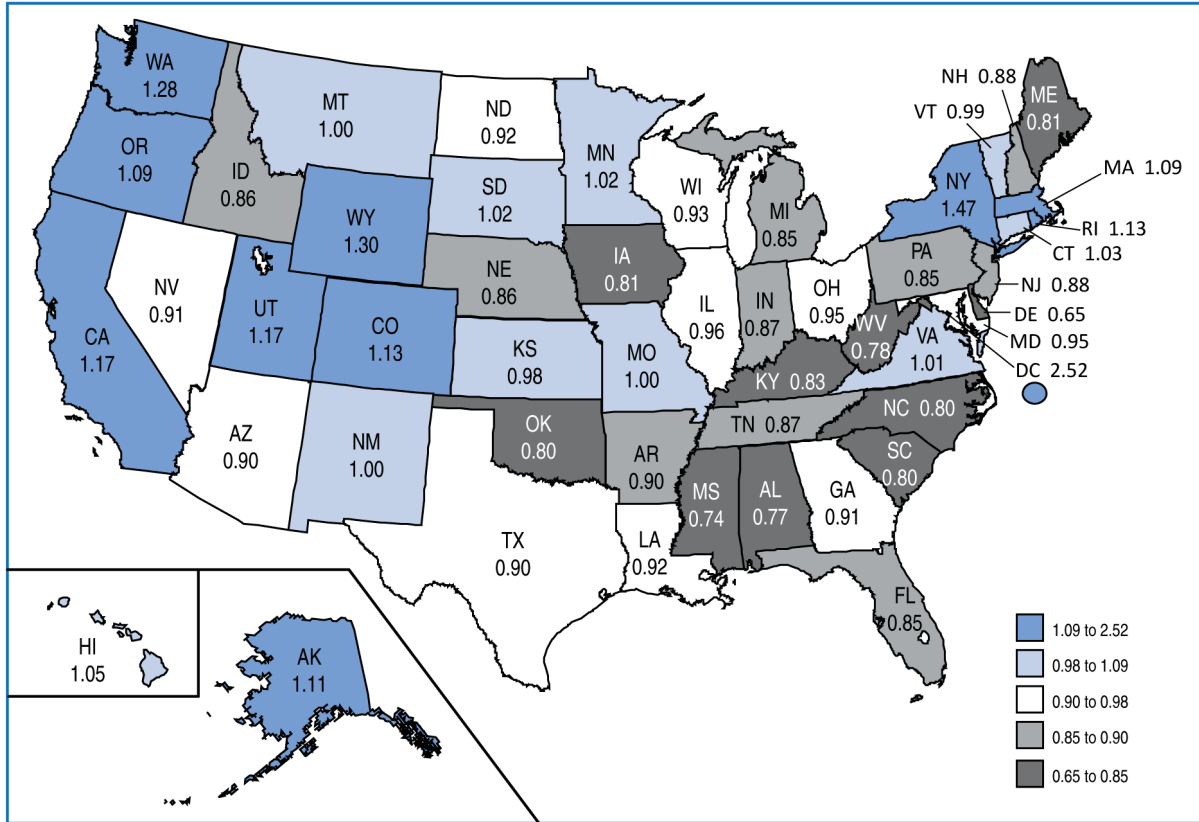
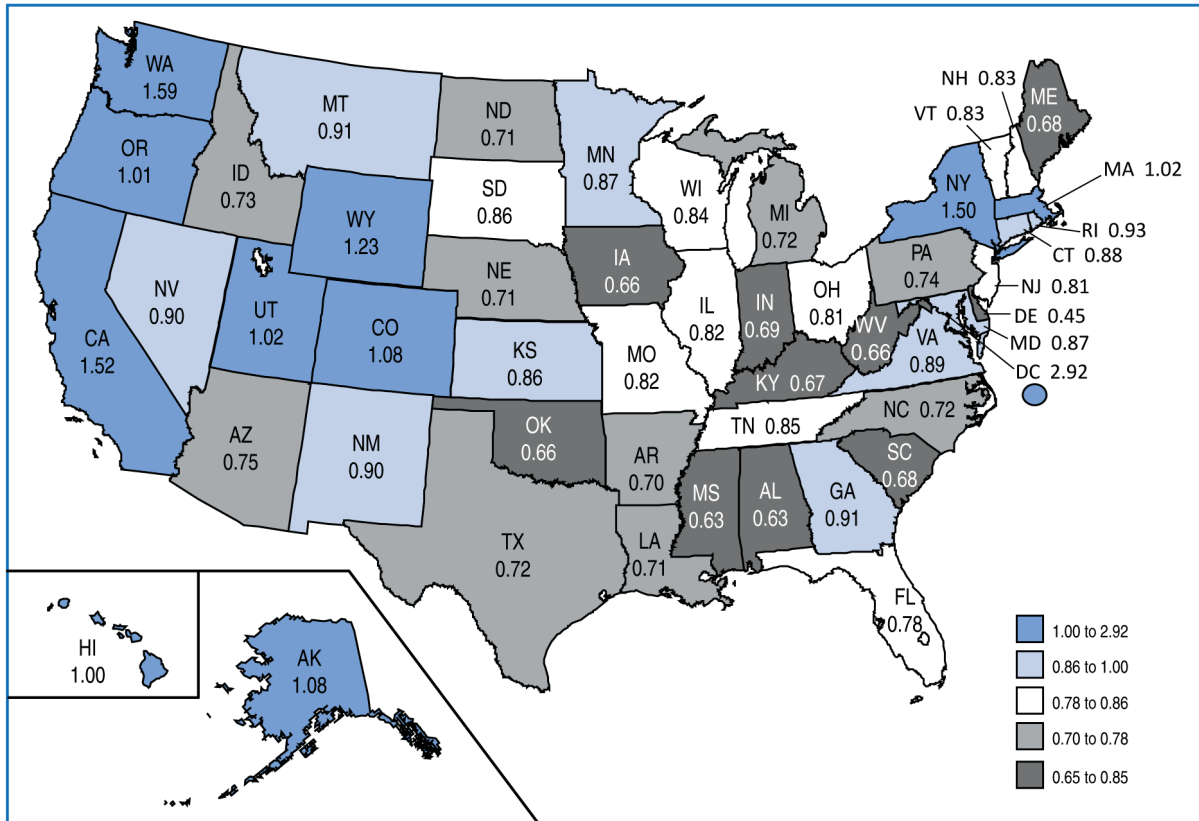


Chart 7. Location Quotients for Employment in the Arts and Cultural Industries, 2014



U.S. Bureau of Economic Analysis

Chart 8. Location Quotients for Compensation in the Arts and Cultural Industries, 2014



U.S. Bureau of Economic Analysis

Table 2. Total and Government Employment in the Arts and Cultural Production Satellite Account by State, 2014

	Total employment	Government employment	Government's share of total employment (percent)
United States	4,802,813	1,124,098	23.4
Alabama	47,458	14,963	31.5
Alaska	11,825	5,216	44.1
Arizona	85,976	18,055	21.0
Arkansas	34,186	14,158	41.4
California	674,865	88,795	13.2
Colorado	96,610	23,926	24.8
Connecticut	57,444	13,692	23.8
Delaware	8,996	1,741	19.4
District of Columbia	51,603	26,520	51.4
Florida	236,557	37,559	15.9
Georgia	126,519	26,023	20.6
Hawaii	21,748	4,754	21.9
Idaho	20,235	6,015	29.7
Illinois	202,397	54,373	26.9
Indiana	93,772	27,163	29.0
Iowa	41,443	12,002	29.0
Kansas	45,513	14,672	32.2
Kentucky	51,398	17,387	33.8
Louisiana	56,368	17,085	30.3
Maine	16,112	4,377	27.2
Maryland	80,498	20,275	25.2
Massachusetts	128,349	24,556	19.1
Michigan	122,364	29,312	24.0
Minnesota	98,400	23,558	23.9
Mississippi	26,110	10,403	39.8
Missouri	92,216	26,815	29.1
Montana	15,039	5,001	33.3
Nebraska	27,406	7,090	25.9
Nevada	40,323	7,657	19.0
New Hampshire	19,960	4,423	22.2
New Jersey	130,603	27,752	21.2
New Mexico	25,620	8,831	34.5
New York	459,942	90,075	19.6
North Carolina	113,064	26,286	23.2
North Dakota	13,764	4,352	31.6
Ohio	171,902	48,353	28.1
Oklahoma	44,108	11,931	27.0
Oregon	64,712	18,154	28.1
Pennsylvania	169,761	32,579	19.2
Rhode Island	17,882	3,958	22.1
South Carolina	49,828	14,707	29.5
South Dakota	14,179	4,710	33.2
Tennessee	83,305	15,838	19.0
Texas	350,643	105,377	30.1
Utah	55,965	12,595	22.5
Vermont	10,486	2,113	20.2
Virginia	120,808	36,369	30.1
Washington	154,230	35,190	22.8
West Virginia	17,399	6,699	38.5
Wisconsin	91,471	24,413	26.7
Wyoming	11,451	6,250	54.6

of 5.96, the highest in the nation, demonstrating the high concentration of this industry in New Mexico's economy.

In the musical instrument manufacturing industry, Tennessee has the highest concentration of employment with an LQ of 4.64 (table 5). The world's largest guitar manufacturing company has their headquarters in Tennessee. Compensation for workers in this industry averages \$82,974 per year, compared with \$61,841

Table 3. Employment and Average Compensation Per Job in the Sound Recording Industry for Selected States

	Employment		Location quotient	Average compensation (dollars)	
	2013	2014	2014	2013	2014
Tennessee	1,594	1,620	6.48	191,003	210,423
New York	2,496	2,542	3.09	252,330	269,068
California	2,736	2,898	1.91	205,228	223,485
Nevada	196	213	1.86	162,627	136,711

Table 4. Employment and Average Compensation Per Job in Arts Manufacturing and in Jewelry and Silverware Manufacturing for New Mexico and South Dakota

	Employment		Location quotient	Average compensation (dollars)
	2013	2014	2014	2014
Arts manufacturing				
New Mexico	1,149	1,154	1.24	39,825
South Dakota	1,051	1,072	2.08	45,266
Jewelry and silverware manufacturing				
New Mexico	818	824	5.96	40,000
South Dakota	395	388	5.19	47,499

Table 5. Employment and Average Compensation Per Job in Arts Manufacturing and in Musical Instrument Manufacturing for Indiana and Tennessee

	Employment		Location quotient	Average compensation (dollars)
	2013	2014	2014	2014
Arts manufacturing				
Indiana	5,780	5,834	2.50	55,764
Tennessee	4,225	4,147	1.37	61,841
Musical instrument manufacturing				
Indiana	424	427	2.30	85,964
Tennessee	774	779	4.64	82,974

in arts and cultural manufacturing as a whole. Indiana is another state with a high LQ in the musical instrument manufacturing industry. Although the industry has declined over the years, Indiana is still the "band instrument capital of the United States" and is home to several long-time manufacturers of band instruments. The average compensation of \$85,964 in this industry is higher than the average compensation of \$55,764 in arts and cultural production manufacturing as a whole.

With only 691 arts and cultural production manufacturing jobs, Vermont is among the smaller manufacturing states. The largest portions of these jobs are in the custom architectural woodwork and metalwork

manufacturing industry. The employment LQ for this industry is 4.72, indicating that Vermont has an extremely high concentration of employees in this industry, compared with the United States as a whole (table 6). This industry uses skilled craftsmen as labor and produces custom pieces made to order.

Table 6. Employment and Average Compensation Per Job in Arts Manufacturing and in Custom Architectural Woodwork and Metalwork Manufacturing for Vermont

	Employment		Location quotient	Average compensation (dollars)
	2013	2014	2014	2014
Arts manufacturing	682	691	1.81	46,598
Custom architectural woodwork and metalwork manufacturing	318	313	4.72	37,927

Wisconsin is well known for its production of beer and cheese, but it also has a robust printed goods manufacturing industry. Wisconsin’s arts and cultural employment manufacturing LQ is 2.66, placing its concentration of such manufacturing employment well above that of the nation. The majority of that employment comes from the printed goods manufacturing industry whose LQ is 3.23 (table 7). This industry produces items that are inputs to other artistic products, such as books and manuscripts. In Wisconsin, commercial gravure printing employs the most workers in arts and cultural industries.

Table 7. Employment and Average Compensation Per Job in Arts Manufacturing and in Printed Goods Manufacturing for Wisconsin

	Employment		Location quotient	Average compensation (dollars)
	2013	2014	2014	2014
Arts manufacturing.....	8,868	8,847	2.66	56,378
Printed goods manufacturing	6,152	6,092	3.23	57,189

Next Steps

In early 2018, BEA will release for the first time state-level estimates of value added for arts and cultural industries. Value added will allow the public to determine how much arts and cultural production contributes to the gross domestic product of each state.

In addition, BEA will continue to focus on improving and refining the methodology for these estimates. For example, one area of continued focus is advertising and broadcasting. Sports are not considered to be part of the cultural production portion of this account and are specifically excluded in the national numbers. BEA is currently exploring the use of microlevel data from several data sources to enhance and refine the state numbers for advertising and broadcasting in order to exclude firms that engage in sports-related broadcasting and advertisements. Comments, questions, and suggestions are welcome at artsandculture@bea.gov.