

BEA BRIEFING

U.S. Arts and Cultural Production Satellite Account, 1998–2012

By Paul V. Kern, David B. Wasshausen, and Steven L. Zemanek

ON JANUARY 12, 2015, the U.S. Bureau of Economic Analysis (BEA) and the National Endowment for the Arts (NEA) released new estimates from the arts and cultural production satellite account.¹ The goal of this new economic account is to provide detailed statistics that shed light on the impact of arts and cultural activities on the U.S. economy. In particular, the account provides an estimate of the arts and cultural sector's contributions to current-dollar gross domestic product (GDP) (table A). In 2012, arts and cultural production accounted for 4.3 percent of GDP.

“With the creation of new data analyses like this one—which shows how arts and culture contribute to GDP—the Department of Commerce is providing a more detailed picture of what drives the U.S. economy, growth, and job creation,” said Secretary of Commerce Penny Pritzker. “Making new data available is another example of how the government is working harder and smarter to produce relevant statistics that better inform individuals, businesses, and decisionmakers.”

The arts and cultural satellite account is the latest in a series of BEA satellite accounts that complement BEA's core economic accounts with detailed data on

key industries such as travel and tourism, healthcare, transportation, and research and development. Satellite accounts provide complementary estimates that do not change the official U.S. economic statistics. Instead, these accounts provide additional statistical detail and allow for more in-depth analysis of a particular sector or aspect of the economy.

Further, because satellite accounts complement existing accounts, they serve as a laboratory for experimenting and developing concepts and methodologies that are not ready for implementation into the core accounts. For example, BEA's work on capitalizing research and development was initially presented as a satellite account and only after much refinement were the statistics incorporated into the core accounts in 2013.

Acknowledgments

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Table A. Output and Value Added by Industry, 2012

[Millions of dollars]

Industry	Output	Value added
Core arts and cultural production	221,181	129,011
Performing arts.....	81,267	45,079
Museums.....	11,520	5,075
Design services.....	114,951	71,277
Arts education.....	13,442	7,581
Supporting arts and cultural production	869,321	547,003
Arts support services.....	145,121	103,502
Information services.....	546,306	343,073
Manufacturing.....	38,940	17,012
Wholesale and retail trade.....	118,077	73,059
Construction.....	20,875	10,356
All other industries	41,753	22,681
Total	1,132,254	698,695

1. Preliminary prototype estimates for the arts and cultural production satellite account were released December 5, 2013 jointly by the National Endowment for the Arts and the Bureau of Economic Analysis.

The arts and cultural account provides estimates for the years 1998–2012 on select arts and cultural commodities and industries (both for profit and non-profit) that are currently reflected in GDP statistics. These estimates consist of nominal industry output, direct and indirect employment (salaried and self-employed), compensation of employees, and “value added” by industry.

The remainder of this article offers a brief overview of the arts and cultural account, information about the concepts and methodology used to construct the account, a discussion of the results for 2012 and some comments about future directions of the account.

Arts and Cultural Account Overview

Like other BEA satellite accounts, the arts and cultural account was built from the bottom up, using the rich detail provided by BEA’s input-output (I-O) accounts, notably the 2007 benchmark I-O account.² Benchmark I-O tables—which are produced roughly once every five years and are based on the highest quality source data—provide a detailed look at the relationships among industries, estimating each one’s contribution to GDP.

The arts and cultural account essentially rearranges the I-O account in order to feature arts and cultural activity. For example, the satellite account details the construction of museums, concert halls, and libraries, while the I-O account presents construction more broadly. As another example, fine arts education is a part of education in the benchmark I-O table, but in this satellite account, it can be shown with other arts statistics. Also, while gaming software is part of application and database software in the benchmark I-O account, it too can be separated and shown as part of the arts and cultural account.

The arts and cultural account presents annual statistics from 1998 to 2012 for the following items: (1) current-dollar output by detailed arts and cultural production industries and commodities, (2) employment and compensation within these industries, (3) current-dollar value added by industry, and (4) commodity-flow details for arts and cultural production products.

The statistics are presented under the two broad headings: (1) core arts and cultural production and (2) supporting arts and cultural production. 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.

Value added, compensation, and employment statistics are presented by the producing industry for detailed categories (see table 2). Output statistics span both the commodity and the industry dimensions and form the foundation of these statistics (tables 1 and 6). The industries and commodities are based on the 2007 North American Industrial Classification System (NAICS).³

Constructing the Arts and Cultural Account

Conceptual framework

Culture can be defined in a variety of ways to include language, traditions, beliefs, and values. For this new account, the definition of arts and cultural production is mainly consistent with definitions used by the United Nations and the European Union. The I-O framework provides the necessary tools to identify and to estimate the value of the creative chain associated with arts and cultural production. This chain captures the economic value of the creation of a cultural product (for example, composing a symphony) to its production (the performance being recorded in a studio), then the distribution (by various modes), and finally, the consumption (by the listener).

Methodology

Although the conceptual boundary of art and culture in the U.S. economy is difficult to discern, using the detailed economic transactions from a benchmark I-O account that comprise art and cultural production was the best course to produce these estimates. The flexible nature and sound framework offered by a satellite account makes this an ideal fit for estimating the value of art and cultural production.

Items were identified for inclusion in this account through a highly collaborative effort with economists

3. Additional details on the composition of each of these categories are available on the [Census Bureau’s Web site](#).

2. For additional details, see Donald D. Kim, Erich H. Strassner, and David B. Wasshausen, “Industry Economic Accounts: Results of the Comprehensive Revision and Revised Statistics for 1997–2012,” *SURVEY OF CURRENT BUSINESS* 94 (February 2014).

Data Availability

The detailed annual statistics on art and cultural production for 2012 are presented in six tables at the end of this article. The complete set of detailed annual statistics for 1998 through 2012 are available on [BEA’s Web site](#).

and research staff from BEA and from NEA. The U.S. I-O accounts consist primarily of the make and use tables, which present statistics on the production and uses (both intermediate and final) of products by industries. Using existing I-O account statistics, detailed make table transactions were carefully evaluated and identified for inclusion into this satellite account. A full suite of I-O statistics—including gross output, intermediate input, and value added—was then developed based on this initial list.

The new account: Step by step

The arts and cultural production satellite account was developed in seven steps: (1) identifying the arts and cultural production commodities, (2) identifying the industries, (3) identifying the arts and cultural portions, (4) estimating output, (5) estimating value added, (6) estimating employment and compensation, and (7) estimating total and indirect output and employment.

Identifying the commodities. The make and use tables present detailed information on about 6,000 items or detailed commodities within the U.S. economy. These items range from agricultural products to professional services to government services. A list of every commodity in the 2007 benchmark I-O account was generated. BEA staff worked closely with NEA staff to designate which commodities were related to arts and cultural production. A commodity was considered for inclusion if its output is intended chiefly as a function of creative or aesthetic engagement and if its goods and services are intended chiefly to facilitate public access to its output. About 400 commodities were selected to be included in the arts and cultural production satellite account.⁴

Identifying the industries. After the list of commodities was completed, the industries were then identified. This task was comparably simple in that these industries were defined as those that produce the commodities that had previously been identified as arts and culture related. Most of these industries already exist in the I-O accounts. However, the art support industry is not recognized in the 2007 benchmark I-O or in the 2007 NAICS. This industry is a hybrid that consists of portions of several industries from the benchmark I-O account and 2007 NAICS.

Identifying the arts and culture portions. Some of the items selected for inclusion into the arts and cultural production satellite account are not entirely related to arts and culture; for example, book publishing is primarily, but not entirely, an arts-related commodity. Books on sports, however, were excluded from

these estimates as were all sports. In order to separate the arts portion from the nonarts portion, several data sources were used to supplement the information available from the I-O account, including detailed information from the Census Bureau's economic censuses. In some cases, the detailed information from the Census Bureau provided additional insights that proved invaluable in identifying the arts-related portion of a commodity. For detailed goods and services, the guiding principle was to separate the creative from the repetitive.

The construction industry is unique. Detailed statistics from a private source were used to identify specific construction projects that were considered to be entirely arts related.

Estimating output. Commodity output for the arts and cultural production satellite account is estimated by applying the portions developed in the prior step to the output of the 400 commodities related to arts and cultural production. The initial item output is taken from the benchmark I-O account. The industry output is then derived by aggregating commodity output across industries defined in the prior step. Table 1 in the appendix presents the production of commodities by industry for the year 2012.

Estimating value added. Value added is the difference between an industry's output and the cost of its intermediate inputs. In a fully integrated I-O framework, value added equals the sum of the industry's compensation paid; taxes on production and imports paid less subsidies received; and gross operating surplus earned. Value added for arts and cultural production is imputed at a detailed level by employing the relationship between the industry output for arts and cultural production and total industry output; that is, the ratio of intermediate consumption associated specifically with the industry output for arts and cultural production is assumed to be the same as the ratio of total industry intermediate consumption to total industry output. Table 2 presents output, intermediate consumption and value added by industry for 2012.⁵

Estimating employment and compensation. Employment and compensation for arts and cultural production are estimated using a methodology similar to that used for measuring intermediate consumption for arts and cultural production. Employment and compensation statistics for arts and cultural production are derived at a detailed industry level by applying the ratio of output for arts and cultural production to total industry output to total industry employment and compensation. Table 4 in the appendix presents

4. For the purposes of the U.S. arts and cultural production account, all sports were excluded wherever possible.

5. Estimates presented in table 2 reflect aggregations of detailed items, in which the ratio between intermediate consumption and total output matches the ratio between total industry output and the arts-related portion of the industry.

employment and compensation of employees by industry for 2012.

Estimating total and indirect output and employment. The arts and cultural production satellite account includes estimates of direct output and employment for commodities and industries that are related to arts and cultural production. The estimates for indirect output and employment begin with the direct measures. Total output and total employment equals the sum of the direct and indirect components.

Indirect output consists of all the outputs used as inputs in the process of producing the direct output; for example, the paper used in books is an input into book manufacturing, so paper is considered indirect output. Multipliers from BEA's total requirements tables, which show the production required (both directly and indirectly) to meet final demand, are used to estimate these values.⁶ Similarly, estimates for indirect employment are prepared using a requirements-type table that is specifically for employment, produced as part of BEA's regional input-output modeling system (RIMS).⁷ RIMS employment multipliers are applied to the direct employment estimates to produce total employment for arts and cultural production, with the difference between total employment and direct employment equal to indirect employment. Indirect employment consists of all jobs in which the workers are engaged in the production of indirect arts-related output; for example, indirect employment includes the employees producing the paper that is used as an input for books.

A Look at the Data

Value added

In 2012, value added for arts and cultural production was \$698.7 billion, accounting for 4.3 percent of GDP (chart 1). The share of GDP accounted for by arts and cultural production was larger than the share of industries such as mining (2.5 percent), utilities (1.6 percent), and banking (2.9 percent).

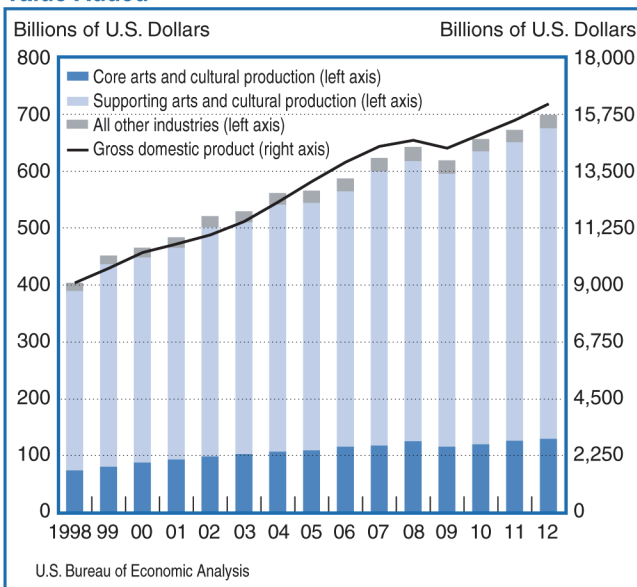
Core arts and cultural production contributed \$129.0 billion to GDP in 2012, and supporting arts and cultural production contributed an additional \$547.0 billion.

In the core group, design services was the largest contributor, at \$71.3 billion (table 2). Value added for performing arts—which includes independent artists, writers, and performers—was \$45.1 billion. Within the “supporting” group, “information” was the leading

6. For additional information on total requirements, see Karen J. Horowitz and Mark A. Planting, *Concepts and Methods of the U.S. Input-Output Accounts* on BEA's Web site.

7. For additional information on BEA's Regional Input-Output Modeling System, see *RIMS II User Guide* on BEA's Web site.

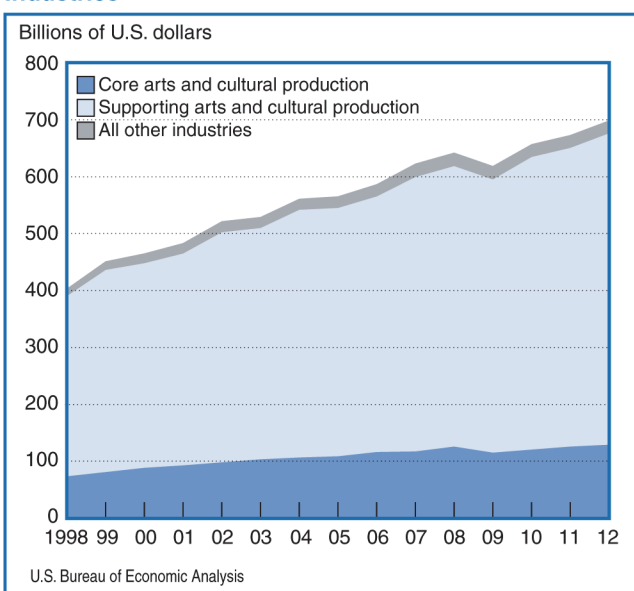
Chart 1. GDP Compared to Arts and Cultural Production Value Added



contributor to value added, with \$343.1 billion. Value added for the information category reflects the production of telecommunications, broadcasting and other related services required to deliver many of the core art and cultural products. The second largest contributor to value added was “art support,” which includes both public and private promoters of the performing arts.

Value added attributable to arts and cultural production tracked GDP fairly well, but it appeared to be more sensitive to the contraction over the recent business cycle than the overall economy (chart 1). During

Chart 2. Value Added by Arts and Cultural Production Industries

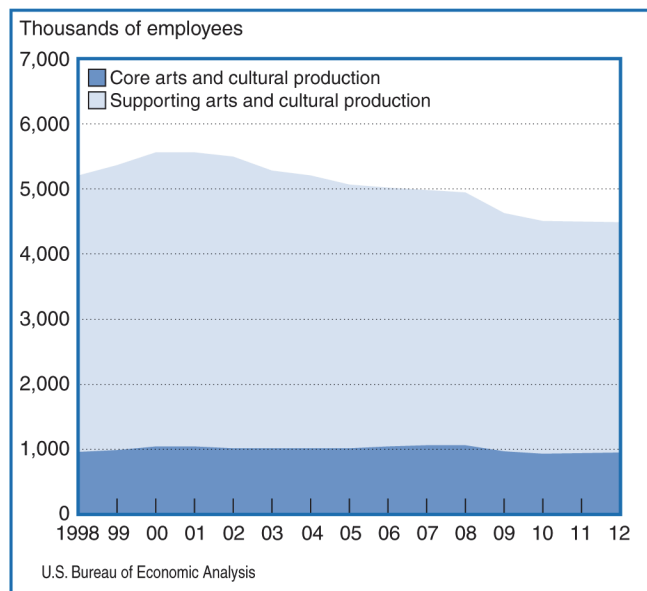


the Great Recession, arts and cultural production fell a bit deeper than GDP, and during the expansion following the 2001 recession, arts and cultural production grew at a slightly slower pace than GDP. From 2001 to 2007, the average annual growth of GDP was 5.3 percent, and the average annual growth of arts and cultural production was 4.1 percent.

Employment

The arts and cultural sector broadly accounted for 4.7 million workers in 2012, and compensation for these workers was \$334.9 billion, larger than the compensation for all nondurable-goods manufacturing (\$313.3 billion). The core arts and cultural industries accounted for one million of these jobs, while the supporting industries accounted for 3.5 million jobs. Other industries account for the remainder. The advertising industry was the primary contributor to core employment (133.5 thousand jobs). The primary contributor to supporting industries' employment was the government sector (1.1 million jobs).

Chart 3. Employment by Arts and Cultural Production Industries

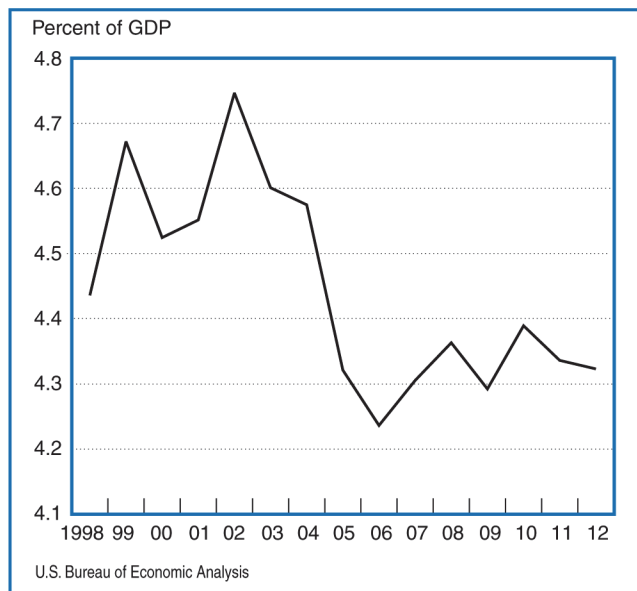


Future Directions

Satellite accounts at BEA evolve on two broad fronts: as the user community provides input into the estimates and as the underlying structure of the U.S. I-O accounts evolve through the 5-year revision cycle.

Increased frequency of the release of national statistics is not envisioned for the arts and cultural production satellite account at this time. However, NEA is charged with promoting art and culture in all 50 states and the District of Columbia. As a result, BEA has begun work on developing state-level statistics on arts and cultural production. The relationship between the national GDP estimates and GDP by state estimates is firmly etched in the BEA structure; both sets of accounts are tied to the I-O account. It is expected that a regionalization of this satellite account will be extremely helpful to the arts community. BEA also plans to develop chain-type volume measures, which will be helpful for additional cross-industry comparisons and trend analysis.

Chart 4. Arts and Cultural Production Industries' Share of Gross Domestic Product



Tables 1 through 6 follow.

Table 1. Production of Commodities by Industry, 2012

[Millions of dollars]

Commodity	Industry										
	Performing arts	Museums	Design services	Arts education	Art support	Information	Manufacturing	Construction	Wholesale and retail trade	All other industries	Domestic production at producers' prices
Core arts and cultural production.....	63,835	11,458	114,395	13,313	100,067	220,438	11,897	.....	3,325	32,338	571,068
Performing arts.....	58,861	6	6	.....	.....	.....	.....	.....	.....	1,128	60,001
Museums.....	.....	11,443	.....	.....	6,177	.....	.....	.....	.....	.....	17,617
Design services.....	827	10	113,210	.....	995	151,576	11,897	.....	3,226	31,196	312,934
Arts education.....	.....	.....	.....	13,313	92,897	.....	.....	.....	100	.....	106,310
Entertainment originals.....	4,148	.....	1,180	.....	.....	68,862	.....	.....	.....	13	74,203
Supporting arts and cultural production.....	17,430	62	558	129	45,054	325,869	27,043	20,875	114,751	9,415	561,186
Arts support services.....	17,283	.....	.....	.....	37,635	93	.....	.....	693	100	55,804
Information services.....	.....	.....	344	.....	5,858	325,332	.....	.....	.....	2,568	334,102
Manufacturing.....	.....	.....	135	.....	570	247	26,978	.....	5,053	1,240	34,221
Construction.....	114	19	.....	84	866	.....	.....	20,875	.....	163	22,120
Arts-related wholesale and retail trade	35	43	79	45	128	193	66	.....	109,008	5,345	114,940
Nonarts-related production.....	11,514	841	253,703	241,710	1,633,235	457,699	146,920	84,413	3,567,123	21,164,049	27,561,208
All other wholesale and transportation margin.....	.....	.....	179	.....	71	1,628	2,256	.....	1,536,444	63,324	1,603,903
All other retail margin.....	338	409	710	429	1,206	1,411	.....	.....	1,246,691	33,642	1,284,836
All other commodities.....	11,176	432	252,815	241,280	1,631,955	454,660	144,664	84,413	783,989	21,067,083	24,672,469
Industry output.....	92,781	12,361	368,657	255,151	1,778,357	1,004,006	185,862	105,288	3,685,199	21,205,802	28,693,462
Intermediate inputs.....	41,711	6,916	122,709	107,196	507,595	396,761	105,848	53,056	1,420,823	9,686,259	12,448,878
Value added.....	51,071	5,446	245,945	147,955	1,270,763	607,243	80,012	52,232	2,264,377	11,519,543	16,244,584
Compensation of employees.....	19,175	4,458	162,299	125,921	1,105,801	211,901	57,307	33,097	1,179,199	5,720,810	8,619,970
Taxes on production and imports less subsidies.....	3,756	298	4,558	7,978	5,259	27,162	1,973	703	414,475	599,467	1,065,629
Gross operating surplus.....	28,138	689	79,090	14,056	159,701	368,179	20,733	18,432	670,703	5,199,266	6,558,985

NOTE: The full table is available in the data files accompanying the article on BEA's Web site.

Table 2. Output and Value Added by Industry, 2012

[Millions of dollars]

Industry	Industry output	Intermediate consumption	Value added	Arts and cultural production satellite account			
				Industry ratio	Output	Intermediate consumption	Value added
Core arts and cultural production	728,949	278,534	450,416	.....	221,181	92,169	129,011
Performing arts.....	92,781	41,711	51,071	.....	81,267	36,188	45,079
Performing arts companies.....	27,900	11,124	16,776	0.961	26,802	10,686	16,116
Independent artists, writers, and performers.....	33,796	12,801	20,995	0.919	31,062	11,765	19,297
Agents and managers for artists.....	7,187	3,026	4,161	0.508	3,650	1,537	2,113
Promoters of performing arts and similar events.....	23,898	14,760	9,139	0.827	19,753	12,200	7,553
Museums.....	12,361	6,916	5,446	0.932	11,520	6,445	5,075
Design services.....	368,657	122,709	245,945	.....	114,951	43,675	71,277
Advertising.....	132,889	50,131	82,757	0.354	47,032	17,742	29,289
Architectural services.....	31,092	11,956	19,136	0.727	22,600	8,691	13,910
Landscape architectural services.....	4,304	1,809	2,495	0.924	3,976	1,672	2,305
Interior design services.....	11,850	4,920	6,930	0.910	10,787	4,479	6,308
Industrial design services.....	2,359	831	1,527	0.990	2,335	823	1,512
Graphics design services.....	10,597	3,657	6,939	0.947	10,037	3,464	6,573
Computer systems design.....	160,142	43,283	116,859	0.023	3,695	999	2,696
Photography and photo finishing services.....	13,959	5,693	8,266	0.973	13,586	5,541	8,045
All other design services.....	1,465	429	1,036	0.616	903	264	639
Fine arts education.....	12,263	5,685	6,578	0.434	5,322	2,467	2,855
Education services.....	242,888	101,511	141,377	0.033	8,120	3,394	4,726
Supporting arts and cultural production	6,758,711	2,484,085	4,274,626	.....	869,321	322,319	547,003
Arts support services.....	1,778,357	507,595	1,270,763	.....	145,121	41,621	103,502
Rental and leasing.....	30,442	12,782	17,660	0.299	9,116	3,828	5,288
Grant-making and giving services.....	28,657	11,914	16,743	0.031	888	369	519
Unions.....	68,279	18,896	49,383	0.023	1,586	439	1,147
Government.....	1,607,128	443,099	1,164,029	0.083	132,693	36,585	96,109
Other support services.....	43,851	20,904	22,948	0.019	838	400	439
Information services.....	1,004,006	396,761	607,243	.....	546,306	203,232	343,073
Publishing.....	290,736	107,313	183,423	0.424	123,397	45,547	77,850
Motion pictures.....	120,046	23,190	96,855	0.990	118,822	22,954	95,868
Sound recording.....	20,191	3,844	16,347	0.997	20,137	3,834	16,303
Broadcasting.....	504,342	229,092	275,249	0.440	221,877	100,785	121,091
Other information services.....	68,691	33,322	35,369	0.904	62,073	30,112	31,961
Manufacturing.....	185,862	105,848	80,012	.....	38,940	21,929	17,012
Printed goods manufacturing.....	82,199	44,887	37,312	0.216	17,769	9,704	8,066
Jewelry and silverware manufacturing.....	9,652	5,550	4,102	0.947	9,139	5,255	3,884
Musical instruments manufacturing.....	1,988	1,030	957	0.933	1,854	961	893
Custom architectural woodwork and metalwork manufacturing.....	46,751	30,325	16,425	0.116	5,414	3,512	1,902
Camera and motion picture equipment manufacturing.....	2,358	994	1,364	0.232	547	231	316
Other goods manufacturing.....	42,914	23,062	19,852	0.098	4,217	2,266	1,951
Construction.....	105,288	53,056	52,232	0.198	20,875	10,519	10,356
Wholesale and transportation industries.....	2,207,092	870,564	1,336,528	0.022	47,889	18,889	29,000
Retail industries.....	1,478,107	550,259	927,849	0.047	70,188	26,129	44,059
All other industries	21,205,802	9,686,259	11,519,543	0.002	41,753	19,071	22,681
Total	28,693,462	12,448,878	16,244,584	.....	1,132,254	433,559	698,695

Table 3. Supply and Consumption of Commodities, 2012—Continues

[Millions of dollars]

Commodity	Supply						Intermediate		Consumption				Total consumption
	Domestic production at producers' prices	Imports	Change in inventories	Wholesale trade and transportation margins	Retail trade margins	Total supply at purchasers' value	Private expenditures	Government expenditures	Personal consumption expenditures	Gross private fixed investment	Government final expenditures	Exports	
Core arts and cultural production...	571,068	4,659				575,727	319,880	13,368	62,113	77,057	96,314	6,995	575,727
Performing arts.....	33,441	473				33,914	7,415	150	25,835			514	33,914
Music groups.....	4,543	66				4,608	967	21	3,580			41	4,608
Dance.....	896	13				909	191	4	706			8	909
Opera.....	3,635	53				3,688	774	16	2,865			32	3,688
Symphonies.....	2,517	36				2,554	536	11	1,984			23	2,554
Theater.....	17,416	252				17,668	3,708	79	13,726			156	17,668
Other.....	4,434	53				4,487	1,239	19	2,974			254	4,487
Independent artists, writers, and performers.....	26,560					26,560	25,124	605	188			644	26,560
Museums.....	17,617					17,617			14,018		3,599		17,617
Art.....	1,393					1,393			1,393				1,393
Botanical and zoological.....	2,142					2,142			2,142				2,142
Children's.....	487					487			487				487
Historical sites.....	4,509					4,509			4,509				4,509
History.....	279					279			279				279
Natural.....	2,228					2,228			2,228				2,228
Nature parks.....	4,003					4,003			404		3,599		4,003
Science.....	2,228					2,228			2,228				2,228
Other.....	348					348			348				348
Design services.....	312,934	4,115				317,052	285,120	12,330	10,372	2,854	558	5,815	317,052
Advertising.....	239,797	2,768				242,565	234,454	4,566	345			3,200	242,565
Architectural, historic restoration services.....	1,761	54				1,816	1,502	147				167	1,816
Landscape architectural services.....	5,566	168				5,735	3,898	1,680				156	5,735
All other architectural services.....	21,259	651				21,910	18,093	1,765				2,052	21,910
Interior design services.....	11,628					11,628	6,543	2,439	2,646				11,628
Industrial design services.....	2,403	48				2,451	2,393	13				44	2,451
Graphics design services.....	9,855	90				9,945	8,388	1,546				11	9,945
Fashion design services.....	839					839	813	26					839
Computer systems design.....	4,721	311				5,032	1,398	49		2,854	558	173	5,032
Photography and photo finishing services.....	14,944	25				14,970	7,482	94	7,381			12	14,970
All other design services.....	161					161	156	5					161
Fine arts education.....	5,396					5,396	2,053		3,331			12	5,396
Education services.....	100,914	71				100,985	170	282	8,368		92,157	9	100,985
Entertainment originals.....	74,203					74,203				74,203			74,203

Table 3. Supply and Consumption of Commodities, 2012—Table Ends

[Millions of dollars]

Commodity	Supply						Intermediate		Consumption				Total consumption
	Domestic production at producers' prices	Imports	Change in inventories	Wholesale trade and transportation margins	Retail trade margins	Total supply at purchasers' value	Private expenditures	Government expenditures	Personal consumption expenditures	Gross private fixed investment	Government final expenditures	Exports	
Supporting arts and cultural production	561,186	30,029	2,444	46,528	68,412	588,771	148,020	8,002	306,069	28,413	45,321	52,946	588,771
Arts support services.....	55,804	240				56,044	14,763	145	15,151		25,267	718	56,044
Rental and leasing.....	9,838					9,838	5,167		4,657			13	9,838
Agents and managers for artists.....	3,519					3,519	3,405					114	3,519
Promoters of performing arts and similar events.....	14,326	240				14,566	5,336	1	8,661			569	14,566
Grant-making and giving services.....	883					883			883				883
Unions.....	1,134					1,134	310	45	779				1,134
Government.....	25,267					25,267					25,267		25,267
Other support services.....	837					837	545	99	171			22	837
Book publishing.....	16,027	1,191	532	3,332	8,250	28,269	1,495	2,479	22,304			1,991	28,269
Education (K-12).....	1,969	75	86	391	181	2,531	19	1,956	330			225	2,531
Higher education.....	953	21	41	186	458	1,577	44	153	1,242			139	1,577
General reference.....	716	5	32	138	383	1,210	107	11	1,051			41	1,210
Professional, technical, and scholarly.....	2,835	144	126	570	1,149	4,572	852	359	3,047			314	4,572
Adult trade.....	7,405	946	195	1,629	4,689	14,474	395		12,823			1,256	14,474
Children.....	2,149		52	418	1,390	3,905	78		3,811			16	3,905
Other publishing.....	59,221	948	356	14,632	14,942	89,384	4,908	2,393	52,893	16,189	1,683	11,319	89,384
Cards, calendars, and other.....	7,904	553	105	1,125	6,749	16,225	1,691	2,351	11,978			205	16,225
Newspapers and periodicals.....	19,079	389	114	3,919	2,040	25,311	1,806	42	21,549			1,915	25,311
Software.....	32,238	6	137	9,588	6,153	47,848	1,411		19,366	16,189	1,683	9,199	47,848
Information services.....	258,854	6,180	181	4,696	6,888	276,437	112,315	1,922	133,596		3,453	25,152	276,437
Broadcasting.....	118,379					118,379	43,832	1,042	73,492			13	118,379
Sound recording.....	16,243	1,315	95	2,305	3,854	23,622	3,429	197	15,077			4,920	23,622
Motion pictures.....	14,110					14,110	637		13,474				14,110
Audio/visual production.....	72,481	4,516	86	2,391	3,034	82,336	53,643	70	12,308			16,315	82,336
Other information services.....	37,641	349				37,990	10,774	613	19,245		3,453	3,904	37,990
Manufactured goods.....	34,221	21,472	1,374	23,867	38,332	116,517	14,540	1,063	82,126	5,007	15	13,765	116,517
Jewelry and silverware.....	14,394	13,390	852	9,065	25,755	61,752	136	4	52,382			9,230	61,752
Printed goods.....	6,927	29	101	867	585	8,306	6,144	925	1,228			9	8,306
Musical instruments.....	1,854	1,194	180	1,174	2,419	6,461	241		5,001	433	19	767	6,461
Custom architectural woodwork and metalwork.....	5,922	14	57	1,712	785	8,376	4,160	16	263	3,925		12	8,376
Camera and motion picture equipment.....	1,150	1,156	35	1,018	1,107	4,396	1,193		2,287	620	6	289	4,396
Other goods.....	3,974	5,689	149	10,031	7,681	27,226	2,666	118	20,965	29	-10	3,458	27,226
Construction.....	22,120					22,120				7,217	14,903		22,120
Wholesale trade and transportation margins.....	46,528												
Retail trade margins.....	68,412												
Nonarts-related production	27,561,208	2,465,275	63,649	1,603,903	1,284,836	29,962,834	11,124,005	835,603	10,781,420	2,303,634	3,025,350	1,892,821	29,962,834
All other wholesale trade and transportation margins.....	1,603,903												
All other retail margins.....	1,284,836												
All other commodities.....	24,672,469	2,465,275	63,649	1,603,903	1,284,836	29,962,834	11,124,005	835,603	10,781,420	2,303,634	3,025,350	1,892,821	29,962,834

Table 4. Employment and Compensation of Employees by Industry, 2012

Industry	Total employment (thousands of employees)	Compensation (millions of dollars)	Arts and cultural production satellite account		
			Industry ratio	Employment (thousands of employees)	Compensation (millions of dollars)
Core arts and cultural production	4,821.2	311,854.8		956.4	63,544.2
Performing arts.....	282.6	19,176.0		237.5	16,728.4
Performing arts companies.....	104.2	7,080.4	0.961	100.1	6,801.6
Independent artists, writers, and performers.....	39.9	6,791.0	0.919	36.7	6,241.6
Agents and managers for artists.....	43.4	2,194.3	0.508	22.1	1,114.4
Promoters of performing arts and similar events.....	95.1	3,110.3	0.827	78.6	2,570.8
Museums.....	131.2	4,458.3	0.932	122.3	4,154.9
Design services.....	1,519.3	162,299.3		460.6	36,031.7
Advertising.....	377.2	32,517.5	0.354	133.5	11,508.5
Architectural services.....	140.8	14,433.7	0.727	102.3	10,491.6
Landscape architectural services.....	23.1	2,020.7	0.924	21.3	1,866.8
Interior design services.....	21.3	1,520.9	0.910	19.4	1,384.6
Industrial design services.....	24.8	918.7	0.990	24.5	909.5
Graphics design services.....	64.8	3,649.5	0.947	61.4	3,456.9
Computer systems design.....	783.6	102,810.7	0.023	18.1	2,371.9
Photography and photo finishing services.....	80.2	3,678.1	0.973	78.0	3,580.0
All other design services.....	3.5	749.5	0.616	2.1	461.9
Fine arts education.....	98.6	6,041.0	0.434	42.8	2,621.5
Education services.....	2,789.6	119,880.4	0.033	93.3	4,007.6
Supporting arts and cultural production	42,160.3	2,587,305.6		3,537.4	260,135.5
Arts support services.....	14,662.9	1,105,800.8		1,180.3	88,082.9
Rental and leasing.....	140.2	4,344.8	0.299	42.0	1,301.1
Grant-making and giving services.....	150.6	11,081.6	0.031	4.7	343.6
Unions.....	697.2	45,838.3	0.023	16.2	1,064.9
Government.....	13,491.4	1,030,832.8	0.083	1,113.9	85,111.3
Other support services.....	183.5	13,703.3	0.019	3.5	262.0
Information services.....	2,162.8	211,901.6		1,174.7	114,722.2
Publishing.....	813.6	89,990.2	0.424	345.3	38,194.7
Motion pictures.....	371.1	28,142.8	0.990	367.3	27,855.9
Sound recording.....	12.9	2,325.2	0.997	12.8	2,318.9
Broadcasting.....	912.1	78,238.0	0.440	401.3	34,419.5
Other information services.....	53.1	13,205.4	0.904	48.0	11,933.2
Manufacturing.....	949.0	57,307.5		183.6	11,959.1
Printed goods manufacturing.....	460.0	25,899.0	0.216	99.4	5,598.7
Jewelry and silverware manufacturing.....	27.7	2,635.2	0.947	26.2	2,495.4
Musical instruments manufacturing.....	8.7	806.0	0.933	8.1	752.0
Custom architectural woodwork and metalwork manufacturing.....	252.3	12,409.3	0.116	29.2	1,437.0
Camera and motion picture equipment manufacturing.....	7.8	1,100.7	0.232	1.8	255.3
Other goods manufacturing.....	192.5	14,457.3	0.098	18.9	1,420.7
Construction.....	464.2	33,096.6	0.198	92.0	6,561.9
Wholesale and transportation industries.....	8,888.8	666,410.0	0.022	192.9	14,459.6
Retail industries.....	15,032.8	512,789.0	0.047	713.8	24,349.9
All other industries.....	92,759.6	5,720,809.7	0.002	182.6	11,263.8
Total	139,741.0	8,619,970.0		4,676.4	334,943.5

Table 5. Employment by Industry, 2012

[Thousands of employees]

Industry	Direct arts-related employment	Total industry employment multiplier	Total arts-related employment
Core arts and cultural production	956.4		1,437.9
Performing arts	237.5		477.7
Performing arts companies	100.1	1.35	135.5
Independent artists, writers, and performers....	36.7	2.90	106.4
Agents and managers for artists	22.1	2.34	51.7
Promoters of performing arts and similar events.....	78.6	2.34	184.1
Museums	122.3	1.28	156.1
Design services	460.6		645.3
Advertising	133.5	1.49	199.5
Architectural services	102.3	1.53	156.8
Landscape architectural services	21.3	1.53	32.6
Interior design services	19.4	1.23	23.8
Industrial design services	24.5	1.23	30.1
Graphics design services	61.4	1.23	75.4
Computer systems design.....	18.1	1.48	26.7
Photography and photo finishing services.....	78.0	1.25	97.8
All other design services	2.1	1.23	2.6
Fine arts education.....	42.8	1.13	48.3
Education services	93.3	1.18	110.5
Supporting arts and cultural production	3,537.4		5,815.9
Arts support services.....	1,180.3		1,263.7
Rental and leasing.....	42.0	2.78	116.8
Grant-making and giving services	4.7	1.45	6.8
Unions	16.2	1.33	21.5
Government.....	1,113.9	1.00	1,113.9
Other support services	3.5	1.35	4.7
Information services	1,174.7		2,910.4
Publishing.....	345.3	3.56	1,231.0
Motion pictures	367.3	1.53	562.2
Sound recording.....	12.8	3.50	44.9
Broadcasting	401.3	2.32	932.1
Other information services	48.0	2.92	140.2
Manufacturing	183.6		301.1
Printed goods manufacturing	99.4	1.73	172.2
Jewelry and silverware manufacturing	26.2	1.47	38.5
Musical instruments manufacturing	8.1	1.22	9.9
Custom architectural woodwork and metalwork manufacturing.....	29.2	1.66	48.4
Camera and motion picture equipment manufacturing	1.8	1.19	2.1
Other goods manufacturing.....	18.9	1.59	30.0
Construction	92.0	1.59	146.2
Wholesale and transportation industries	192.9	1.67	322.2
Retail industries	713.8	1.22	872.3
All other industries	182.6	1.80	328.1
Total.....	4,676.4		7,581.8

Table 6. Output by Commodity, 2012

[Millions of dollars]

Commodity	Domestic arts-related output at purchasers' value	Total commodity output multiplier	Total arts-related output
Core arts and cultural production.....	571,068		949,986
Performing arts.....	33,441		58,985
Music groups.....	4,543	1.764	8,013
Dance.....	896	1.764	1,581
Opera	3,635	1.764	6,411
Symphonies	2,517	1.764	4,440
Theater.....	17,416	1.764	30,719
Other	4,434	1.764	7,821
Independent artists, writers, and performers	26,560	1.764	46,849
Museums.....	17,617		30,138
Art	1,393	1.764	2,457
Botanical and zoological	2,142	1.764	3,779
Children's	487	1.764	860
Historical sites.....	4,509	1.764	7,954
History.....	279	1.764	491
Natural	2,228	1.764	3,931
Nature parks	4,003	1.529	6,121
Science	2,228	1.764	3,931
Other	348	1.764	614
Design services.....	312,934		523,129
Advertising	239,797	1.678	402,418
Architectural, historic restoration services	1,761	1.678	2,956
Landscape architectural services	5,566	1.678	9,341
All other architectural services	21,259	1.678	35,676
Interior design services	11,628	1.678	19,513
Industrial design services	2,403	1.678	4,032
Graphics design services.....	9,855	1.678	16,538
Fashion design services	839	1.678	1,408
Photography and photo finishing services	14,944	1.644	24,569
All other design services	161	1.678	271
Fine arts education	5,396	1.590	8,582
Education services	100,914	1.526	154,020
Entertainment originals	74,203	1.729	128,283
Supporting arts and cultural production	558,743		960,369
Arts support services	55,804		89,611
Rental and leasing	9,838	1.605	15,790
Agents and managers for artists.....	3,519	1.764	6,206
Promoters of performing arts and similar events	14,326	1.764	25,270
Grant-making and giving services	883	1.560	1,377
Unions.....	1,134	1.560	1,768
Government	25,267	1.501	37,922
Other support services	837	1.527	1,278
Book publishing	27,078		43,884
Education (K-12)	2,456	1.621	3,980
Higher education.....	1,556	1.621	2,522
General reference	1,205	1.621	1,953
Professional, technical, and scholarly	4,428	1.621	7,176
Adult trade.....	13,528	1.621	21,924
Children.....	3,905	1.621	6,329
Other publishing	88,437		143,321
Cards, calendars, and other.....	15,672	1.621	25,398
Newspapers and periodicals.....	24,923	1.621	40,390
Software.....	47,842	1.621	77,533
Information services	270,257		464,535
Broadcasting.....	118,379	1.696	200,765
Sound recording.....	22,307	1.774	39,583
Motion pictures.....	14,110	1.774	25,038
Audio/visual production	77,820	1.774	138,085
Other information services	37,641	1.622	61,064
Manufactured goods.....	95,045		180,636
Printed goods manufacturing	8,277	1.879	15,556
Jewelry and silverware manufacturing	48,362	1.854	89,687
Musical instruments manufacturing	5,267	1.854	9,768
Custom architectural woodwork and metalwork manufacturing.....	8,362	1.995	16,684
Camera and motion picture equipment manufacturing	3,240	1.920	6,222
Other goods manufacturing	21,537	1.983	42,719
Construction	22,120	1.735	38,381
Total	1,129,811		1,910,355