

# NEBRASKA PRINTING INDUSTRY ECONOMIC & FISCAL CONTRIBUTION



*Demonstrating the Importance of the  
Printing Industry to the Nebraska State  
and Local Governments*

Commissioned by Printing Industry Midwest  
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*The Printing Industry in Nebraska contributes value to the state economy in many ways. The industry generates and supports many jobs, economic output, and government programs. The industry contributes over \$858 million in output, 5,047 jobs, \$189.8 million in labor income, and \$17.2 million in state and local tax revenues.*

## The U.S. Printing Industry

Call it printing. Or call it graphic arts or graphic communications. Whatever you call it, you're referring to one of the largest industries in the United States in terms of not only employees but also annual shipments.

It is very hard to overlook an industry that employs more than 460,000 people in more than 27,500 establishments with annual shipments above \$84 billion. When you include direct and indirect economic contributions the industry's effect is even more impressive with \$182 billion in shipments, employing over 1 million individuals, supporting labor income of \$44.64 billion, and adding \$85.7 U.S. Gross Domestic Product.

## Definition

What has traditionally been referred to as the printing industry encompasses many segments: general commercial printing, quick printing, digital imaging, magazine, newspaper, book and display graphics, financial and legal printing, screen printing, forms printing, label and tag printing, packaging, greeting card, and trade and finishing services.

*(These are encompassed by NAICS code group 323)*

Due to the rapid technological changes and broadening of the scope of services provided by many of the companies in the fields today, it is commonly referred to as the graphic communications industry.

Companies in the business have expanded services to include creative design, retail display design, e-commerce, webpage design and hosting, mailing, fulfillment, and a host of services that provide horizontal marketing well beyond the core printing model. This is a description that accurately represents the broad range of what printers do today.

### Why Conduct an Economic & Fiscal Contribution Study?

The aim of this study is to establish the economic importance of the printing industry to the Nebraska economy. We define importance as the total contribution to the regional economy in terms of shipments, employment, labor income, and value-add/GDP.

#### The Economic Contribution Model

Direct Contribution

+

Indirect Contribution

+

Induced Contribution

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Total Economic Contribution

The results from our economic and fiscal contribution study will show the interconnectedness of the printing industry with the Nebraska economy. We will gain a clear understanding of how much economic activity is being cycled through the Nebraska economy due to printing industry. We will also calculate how much economic activity was associated with the printing industry.

Nebraska Print Industry Fiscal Contributions include Federal, State, and Local Taxes. We estimated these fiscal contributions using data from the PIA *Ratios* financial

benchmarking database, Fiscal Year 2013 Analytical Perspectives Budget of the U.S. government from the OMB, and the Tax Foundation. See Appendix for definitions.

### Economic Contributions

In 2013 the printing industry directly contributed \$523.2 million in output, 2,880 jobs, and \$111.8 million in labor income to Nebraska’s economy. After calculating backward-linked supply chain effects or indirect economic contributions and household spending generated by labor income or induced economic contributions, these values increased significantly. Total economic contributions for the Nebraska economy amounted to \$858.2 million in output, \$384.8 million in value-added (GDP), 5,047 jobs, and \$189.9 million in labor income.

Backward-linked supply chain effects or indirect contributions accounted for 20.8% or \$178.5 million of total economic contribution, 20.3% of employment contribution or 1,024 jobs, and 22.5% of labor income contribution or \$42.8 million. Household spending generated by labor income or induced economic contributions accounted for \$156.5 million or 18.2% of total economic contribution, 22.6% of employment contribution or 1,143 jobs, and 18.6% of labor income contributions or \$35.3 million.

The printing industry in Nebraska generates \$384.8 million in value-added, or GDP, annually through its direct economic impact and indirect/induced effects or approximately 0.35% of the state’s \$109.6 billion total economic output. Compared to the overall national figures, the Nebraska printing industry drives a smaller percent of GDP than other states. The national average is 0.51% of GDP.

## PRINTING INDUSTRY ECONOMIC CONTRIBUTION IN NEBRASKA

	Direct Contribution	Indirect Contribution	Induced Contribution	Total Economic Contribution
Output (\$1000s)	\$523,190.90	\$178,460.40	\$156,538.70	\$858,190.10
Employment	2,880	1,024	1,143	5,047
Labor Income (\$1000s)	\$111,776.00	\$42,787.80	\$35,287.70	\$189,851.50
Value-Added or GDP (\$1000s)	\$245,899.70	\$43,895.70	\$95,011.50	\$384,806.90

Source: RIMS II multipliers and Census Bureau County Business Patterns Database

Figure 1.





Induced employment contributions are based on additional household spending cycling through the economy. The sectors of the Nebraska economy that are most affected by the induced employment contribution include health care and social assistance (20.4%); retail trade (18.4%); and real estate, rental, and leasing (9.4%). Each job directly generated by the printing industry results in 0.40 being supported through induced employment contributions. The induced jobs are lower paying on average because they are in industries with lower wages on average. The average labor income for these jobs is \$30,884 in Nebraska. The industries that are most interconnected to the printing industry through the combination of indirect and induced employment contribution include: manufacturing; health care and social assistance; retail trade; administrative and waste management services; and finance and insurance (Figure 3).

### INDUSTRIES MOST INTERCONNECTED WITH THE PRINTING INDUSTRY IN NEBRASKA

Percent of Indirect and Induced Employment Generated by Print Economic Activity

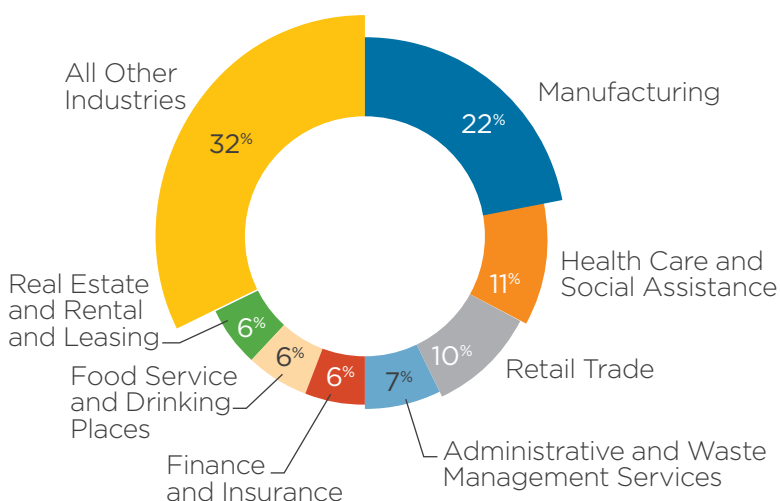


Figure 3.

The printing industry has a weaker relationship with other sectors of the economy in Nebraska compared to Iowa and Minnesota, leading to smaller multipliers. For every additional \$1 in output, the printing industry generates an additional \$0.64 in backward-linked, non-printing industry spending and household spending. To break that down further, every additional \$1 of output generated by the printing industry leads to an additional \$0.34 in backward-linked industries and \$0.29 in additional household spending. In Nebraska, the backward-linked industries the printing industry has the strongest relationship with include manufacturing; wholesale trade; professional, scientific, and technical services; finance and insurance; management of companies and enterprises; and transportation and warehousing. The industries most affected by induced household spending generated by the printing industry include: real estate, rental, and leasing; health care and social assistance; finance and insurance; retail trade; and manufacturing (Figure 2).

Every additional job in the Nebraska printing industry supports an additional 0.75 non-print jobs, inter-industry effects support 0.35 jobs and additional household spending 0.40 jobs. The printing industry has a strong inter-industry relationship with other manufactures—42.8% of print's inter-industry effect is with other manufacturing industries. Since, on average, manufacturing pays higher average salaries than the service sector, the labor income per additional job is high. For each job directly supported by the printing industry in Nebraska, the average labor income per job is \$38,808, and the indirect labor income per job is \$41,788.

### INDUSTRIES MOST INTERCONNECTED WITH THE PRINTING INDUSTRY IN NEBRASKA

Percent of Indirect and Induced Output Generated by Print Economic Activity

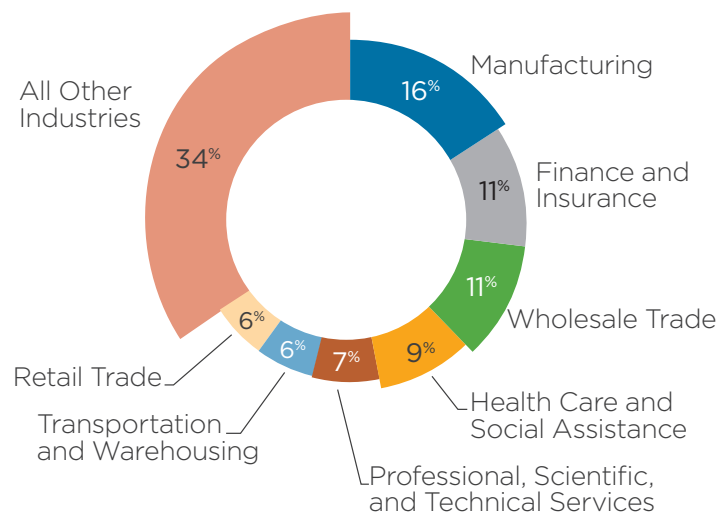


Figure 2.

The Nebraska economy generated \$109.61 billion of Gross Domestic Product (GDP) in 2013 or approximately 0.63% of total U.S. output and 15.87% of PIM total output. Output increased by 6.4% in 2013 with the agricultural and transportation sectors driving over 50% of the growth. The largest industries in terms of percent of GDP in the Nebraska are manufacturing (12.7%); agriculture, forestry, fishing, and hunting (10.4%); real estate and rental and leasing

(9.5%); finance and insurance (7.6%); and transportation and warehousing (7.1%). We do not include government in the list above (12.3% of output) because it is considered a final use of GDP in the input-output models. As you can see in the “Share of Growth” and “Percent Contribution to Change in Output” columns in the table on the following page, the industries that are driving the most growth in 2013 include agriculture, forestry, fishing, and hunting

## GROSS DOMESTIC PRODUCT BY INDUSTRY IN NEBRASKA

(millions of current dollars)

Industry	GDP (millions of current dollars)		Percent change 2012 to 2013	Share of Growth	Contribution to Change in Output	Percent Share of State Output	
	2012	2013				2012	2013
Manufacturing	13,568	13,960	2.9%	6.0%	0.4%	13.2%	12.7%
Agriculture, Forestry, Fishing, and Hunting	8,451	11,429	35.2%	45.5%	2.9%	8.2%	10.4%
Real Estate and Rental and Leasing	9,942	10,426	4.9%	7.4%	0.5%	9.6%	9.5%
Finance and Insurance	7,940	8,380	5.5%	6.7%	0.4%	7.7%	7.6%
Transportation and Warehousing	7,467	7,828	4.8%	5.5%	0.4%	7.2%	7.1%
Health Care and Social Assistance	7,103	7,397	4.1%	4.5%	0.3%	6.9%	6.7%
Wholesale Trade	5,690	5,994	5.3%	4.6%	0.3%	5.5%	5.5%
Retail Trade	5,656	5,833	3.1%	2.7%	0.2%	5.5%	5.3%
Construction	4,320	4,604	6.6%	4.3%	0.3%	4.2%	4.2%
Professional, Scientific, and Technical Services	4,637	4,534	-2.2%	-1.6%	-0.1%	4.5%	4.1%
Management of Companies and Enterprises	2,136	2,753	28.9%	9.4%	0.6%	2.1%	2.5%
Information	2,564	2,629	2.5%	1.0%	0.1%	2.5%	2.4%
Administrative and Waste Management Services	2,339	2,487	6.3%	2.3%	0.1%	2.3%	2.3%
Other Services, Except Government	2,173	2,228	2.5%	0.8%	0.1%	2.1%	2.0%
Accommodation and Food Services	2,030	2,101	3.5%	1.1%	0.1%	2.0%	1.9%
Utilities	1,899	1,782	-6.2%	-1.8%	-0.1%	1.8%	1.6%
Educational Services	855	826	-3.4%	-0.4%	0.0%	0.8%	0.8%
Arts, Entertainment, and Recreation	525	556	5.9%	0.5%	0.0%	0.5%	0.5%
Mining	442	386	-12.7%	-0.9%	-0.1%	0.4%	0.4%
Government	13,326	13,481	1.2%	2.4%	0.2%	12.9%	12.3%
<b>All Industry Total</b>	<b>103,063</b>	<b>109,614</b>	<b>6.4%</b>	<b>100.0%</b>	<b>6.4%</b>	<b>100.0%</b>	<b>100.0%</b>

Figure 4.

(increased 35.2% adding 2.9% to total Nebraska output or 45.5% share of growth); management of companies and enterprises (increased 28.9% adding 0.6% to total output or 9.4% share of growth); and real estate and rental and leasing (increased 4.9% adding 0.5% to total output or 7.4% share of growth).

The size of the industry in the region has an effect on the indirect and induced impact the printing industry has on the regional economy. In other words, on average, the larger the industry the more interconnected it is with various industries within a region.

For example: manufacturing accounts for 12.7% of total economic output in Nebraska or it is the largest industry. Almost 16% of the printing industry's indirect and induced

contributions to the regional economy are circulated through the manufacturing industry. This trend of the larger the industry the greater the inter-relationship with the printing industry is consistent with most industries in the state except for agriculture, forestry, fishing, and hunting (second largest industry in the state but ranked 16th in terms of strength of relationship with the printing industry) and construction (ninth largest industry in the state but ranked 15th in terms of strength of relationship with the printing industry). See the chart below for the complete list of industry output as a percent of total regional output compared to indirect and induced printing industry economic contributions by industry (Figure 5).

## SIZE OF NEBRASKA INDUSTRIES COMPARED TO INDUSTRIES' INDIRECT AND INDUCED RELATIONSHIP WITH THE PRINTING INDUSTRY

Industry	Rank		Percent of	
	By Size of Industry (\$ Output)	By Interconnectedness with the Printing Industry	Total Nebraska Regional GDP	Printing Industry Indirect and Induced Output
Manufacturing	1	1	12.74%	15.6%
Agriculture, Forestry, Fishing, and Hunting	2	16	10.43%	1.2%
Real Estate and Rental and Leasing	3	2	9.51%	11.3%
Finance and Insurance	4	3	7.65%	11.0%
Transportation and Warehousing	5	8	7.14%	5.6%
Health Care and Social Assistance	6	5	6.75%	7.3%
Wholesale Trade	7	4	5.47%	9.2%
Retail Trade	8	7	5.32%	5.7%
Construction	9	15	4.20%	1.3%
Professional, Scientific, and Technical Services	10	6	4.14%	6.5%
Management of Companies and Enterprises	11	9	2.51%	5.0%
Information	12	12	2.40%	3.7%
Administrative and Waste Management Services	13	11	2.27%	4.1%
Other Services, Except Government	14	13	2.03%	3.4%
Accommodation and Food Services	15	14	1.92%	3.2%
Utilities	16	10	1.63%	4.2%
Educational Services	17	17	0.75%	1.2%
Arts, Entertainment, and Recreation	18	18	0.51%	0.5%
Mining	19	19	0.35%	0.0%

Figure 5.

## Fiscal Contributions

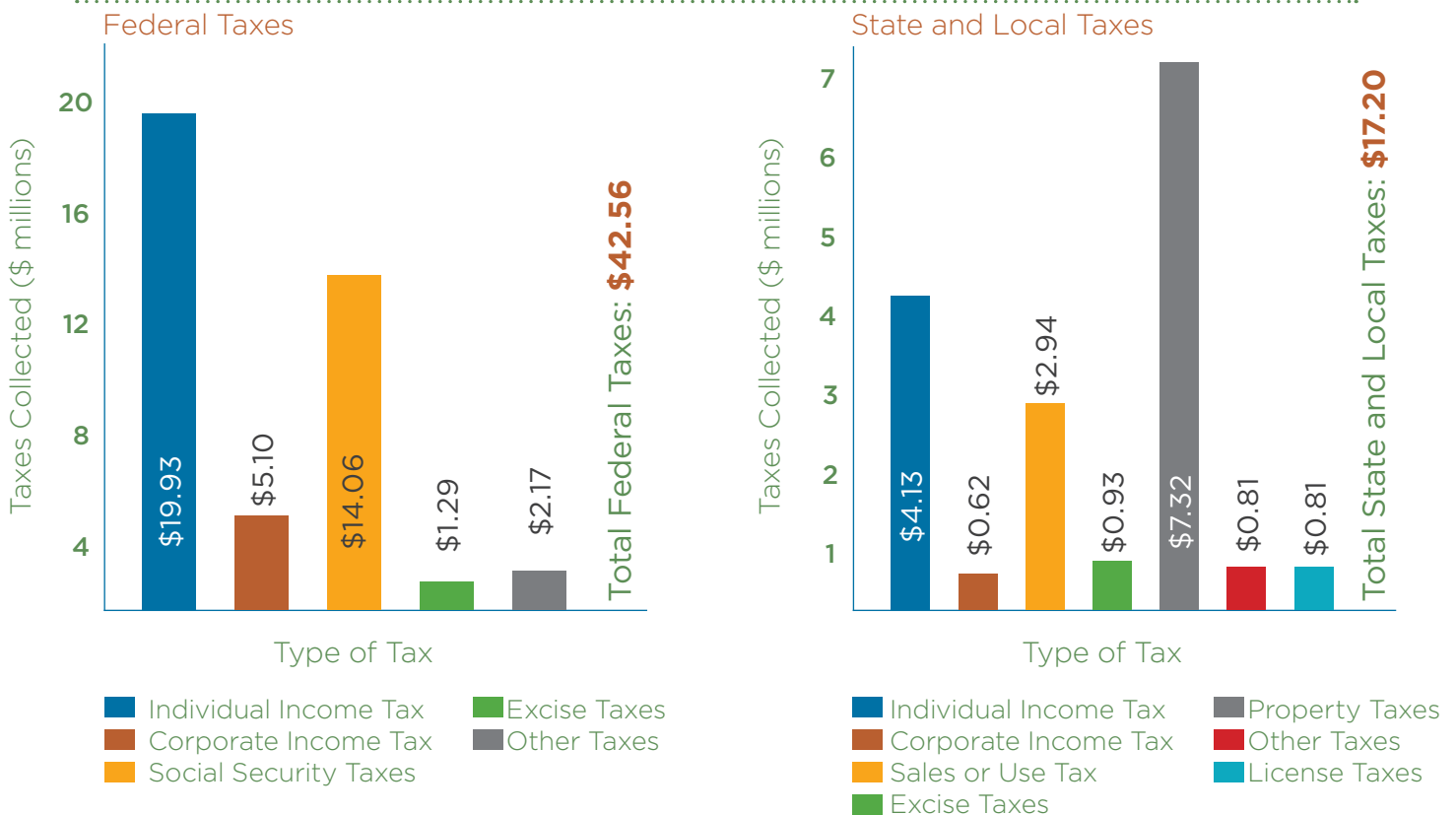
Federal, state, and local tax revenues generated by the Nebraska printing industry totaled \$59.76 million. The printing industry added \$246 million in direct value-added output to Nebraska's gross domestic product and 24.3% of this output was collected by the federal, state, and local governments in taxes. The main source of federal tax revenues was individual income taxes and social security taxes. Nebraska's printing industry revenues generated \$165.97 million in revenue for the state and local governments. Property taxes (43% of state and local collections) and individual income taxes (24%) were the two main sources of revenue for state and local governments (Figure 6).

## Conclusions

The printing industry in Nebraska is a large and moderately interconnected industry. Each additional dollar generated by the printing industry in Nebraska

leads to an additional \$0.64 spent in backward-linked supply chain spending and additional household spending. Each print job supports 0.75 jobs in the Nebraska labor market due to spending of labor income in the backward-linked supply chain industries and household spending. Print industry output in Nebraska is most interconnected with other manufactures; real estate and rental and leasing; and finance and insurance. Print industry employment in Nebraska is most interconnected with the following industries: manufacturing; health care, and social assistance and retail trade. The effects of an industry on the local economy add to total output, employment, wages, and also support of government programs. In Nebraska almost 7% of the printing industry's \$245.9 million in value-added output went to support state and local governments. Data used in this study are based on many sources, including BEA RIMS II multipliers, The Tax Foundation, County Business Patterns Database, PIA Print Market Atlas, and the PIA Ratios Financial database for the printing industry.

## 2013 FEDERAL, STATE, AND LOCAL TAXES GENERATED BY THE PRINTING INDUSTRY IN NEBRASKA



Sources: U.S. Census, Office of Management and Budget, and Tax Foundation

Figure 6.





## Definitions

### **Direct Contribution or Final-Demand Industry:**

The “Direct” contribution relates to the first round of inputs purchased from the final-demand industry or the figure we calculate in the Print Market Atlas. It is the portion of print shipments that are purchased for consumption by the final user. It includes the consumption of the goods and services that are produced and distributed in the economy. In the Input-Output accounts, final-use transactions consist of transactions that make up the final-expenditure components of GDP: Personal consumption expenditures; Private fixed investment; Change in private inventories; Exports of goods and services; Imports of goods and services; Federal, state, and local government consumption expenditures; and Gross investment.

**Indirect Contribution:** Relates to the subsequent rounds of inputs purchased by supporting industries. Some of the supporting industries include: mining, utilities, construction, manufacturing, wholesale trade, retail trade, information, educational services, healthcare, and social services; arts, entertainment, and recreation, etc. The sum of the “Direct” and “Indirect” contributions is called the inter-industry effect or inter-industry total. This takes

into account the spending the printing industry generates in other industries—the impact of local industries buying goods and services from other local industries. The cycle of spending works its way backward through the supply chain until all money leaks from the local economy, either through imports or by payments to value-added.

**Induced Contributions:** RIMS Type II multipliers not only account for the inter-industry effect, but also account for the induced economic contribution to final demand. The induced contribution relates to spending of workers whose earnings or labor income are affected by the final demand contribution. This contribution is called the household-spending contribution. We use the multipliers to measure the total contribution to the state economy.

**Total Economic Contribution:** Includes the final demand generated by the printing industry, the inter-industry contributions or indirect effects, and the induced contribution from household spending that the printing industry supports.

*For more information on how Input-Output multipliers are developed by the BEA we recommend reading the RIMS II handbook, “An essential tool for regional developers and planners.”*



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