

KANSAS AEROSPACE IMPACT

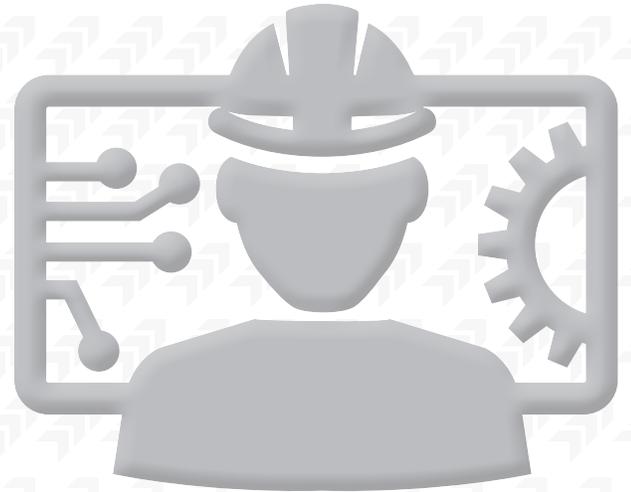
Aerospace Impact

The 2019 aerospace products and parts annualized employment and wages were used to determine the industry's economic contribution in Kansas. At the time of the analysis, 2020 annualized data was available; however, it was determined that the more recent data was not representative of the typical impact on the state's economy. To put this in perspective, employment peaked at 33,182 jobs in 2019 but declined to 25,793 in the following year, primarily due to COVID-19. Future updates of this report will likely examine the temporal effects; however, it was beyond the current scope.

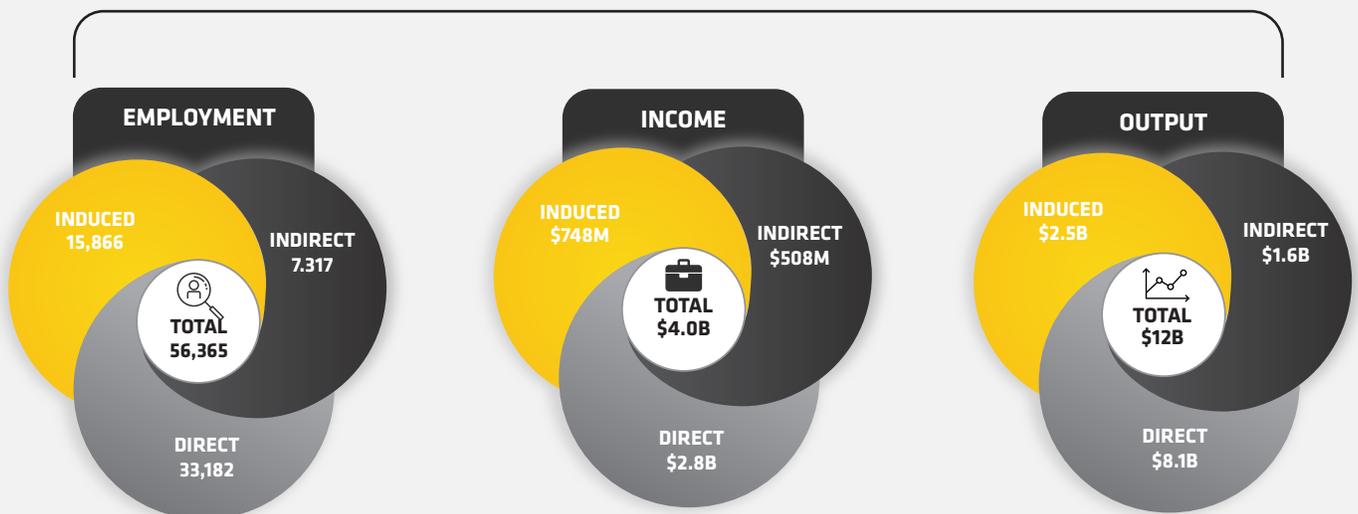
When determining the industry's economic effects, one needs to create a hypothetical scenario of removing the entire sector. Although it is unrealistic to think that all firms would disappear immediately and would not utilize the labor or capital, this method helps capture the depth of the sector's contributions. This method is called economic contribution, which is distinctively different from the typical approach that determines the net new contribution and controls for substitutions.

The starting point in valuing the economic contributions is determining the direct number of jobs, wages, and output. All aerospace products and parts manufacturing employment, designated as NAICS code 3364, was used to simplify the process. Limiting the aerospace sector down will prevent potential double-counting; however, it also has the potential to underestimate the value.

The issue in measuring the industry is due to the complexity of supply chains. For example, there are firms in Kansas designated as machinery, fabricated equipment, and composites that supply to the aerospace industry. If those were the limits of their activity, those interactions would be captured within the economic model as indirect effects; however, these same suppliers often purchase additional goods and services from the regional market. This means that a tier-one or two supplier can also be an originating source, creating new cash within the economy, and it can purchase from other regional suppliers. Future updates of this analysis will likely further narrow in on the accuracy and full scope of the broader aerospace industry. As for now, however, this study will limit the impact of the originating manufacturing to one sector: aerospace products and parts.



AEROSPACE IMPACT TYPE



Source: CEDBR

Aerospace Impact (continued)

In 2019, the aerospace products and parts sector employed 33,182 people within the Kansas economy. Firms within that sector have longstanding supplier contracts with other manufacturing companies, which this model estimates at 1,357. These additional jobs are likely concentrated in machinery manufacturing, fabricated metals, and composites. The aerospace sector also supports jobs across multiple industries. The model estimates a total indirect effect of 7,317 jobs, with the majority of the support sector within the service sector. The service sector jobs range from engineering and marketing to logistics management.

Because of the 33,182 jobs within aerospace and the 7,317 jobs in support sectors, there is also an increase in the number of households within the regional economy. That increase in homes means there is also increased consumer spending flowing through downtowns across the state. Household spending is measured by the induced effect, which tends to be highly concentrated in the retail and healthcare support sectors.

EMPLOYMENT IMPACT				
	Direct	Indirect	Induced	Total
Agriculture	-	2	53	54
Mining	-	51	56	107
Construction	-	39	120	159
Manufacturing	33,182	1,357	131	34,670
TIPU	-	605	703	1,308
Trade	-	1,001	3,144	4,145
Service	-	4,202	11,527	15,729
Government	-	60	131	192
Total	33,182	7,317	15,866	56,365

Source: CEDBR

The aerospace economic contributions can also be measured as labor income and output, which most closely represent sales. Therefore, the 56,365 people supported by the aerospace industry support a total of \$4.0 billion in labor income and \$12.2 billion in total output in 2022 real dollars. To put this in perspective, labor income supported by this industry represents about 22% of all income within the state. In other words, just over one-fifth of the income within Kansas directly comes from aerospace, indirectly from support industries, or household spending.

LABOR INCOME IMPACT				
	Direct	Indirect	Induced	Total
Agriculture	\$-	\$51,660	\$1,535,987	\$1,587,647
Mining	\$-	\$1,223,210	\$1,374,313	\$2,597,522
Construction	\$-	\$2,312,385	\$6,870,094	\$9,182,479
Manufacturing	\$2,763,972,177	\$114,413,271	\$8,887,087	\$2,887,272,536
TIPU	\$-	\$49,385,202	\$56,317,428	\$105,702,629
Trade	\$-	\$79,107,445	\$111,749,859	\$190,857,304
Service	\$-	\$256,648,626	\$550,674,183	\$807,322,809
Government	\$-	\$5,352,803	\$10,713,256	\$16,066,059
Total	\$2,763,972,177	\$508,494,601	\$748,122,206	\$4,020,588,985

Source: CEDBR (2022\$)

Aerospace Impact (continued)

OUTPUT IMPACT				
	Direct	Indirect	Induced	Total
Agriculture	\$-	\$219,017	\$8,502,444	\$8,721,462
Mining	\$-	\$14,543,808	\$17,210,543	\$31,754,351
Construction	\$-	\$7,958,853	\$25,326,806	\$33,285,659
Manufacturing	\$8,142,361,892	\$555,791,932	\$97,765,647	\$8,795,919,471
TIPU	\$-	\$195,570,530	\$212,292,938	\$407,863,468
Trade	\$-	\$270,547,937	\$361,084,194	\$631,632,130
Service	\$-	\$580,734,047	\$1,710,821,340	\$2,291,555,387
Government	\$-	\$15,474,747	\$33,550,696	\$49,025,443
Total	\$8,142,361,892	\$1,640,840,872	\$2,466,554,608	\$12,249,757,372

Source: CEDBR (2022\$)

The aerospace products and parts sector also contribute to government entities through fiscal revenues for employee compensation and tax on production. The model estimates that tax revenue generated by state and local taxes on production and imports accounted for \$194.7 million. The total economic benefit for state and local governments, based on the 2019 data, was \$307.6 million.

FISCAL IMPACT					
	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Total State and Local Tax	\$430,951	\$0	\$191,718,805	\$96,988,485	\$15,415,133
Total Federal Tax	\$465,593,491	\$9,102,383	\$24,795,482	\$270,477,787	\$39,904,494
Total	\$466,024,44	\$9,102,383	\$219,514,287	\$367,466,272	\$55,319,627

Source: CEDBR (2022\$)

Terms and Definitions

- **Direct impact** – A direct effect measures an industry's initial change or value in terms of dollars, jobs, or wages.
- **Indirect impact** – An indirect effect measures the supply chain impact from an initial change or direct impact.
- **Induced impact** – An induced impact measures the household effect from increased demand from an initial change or direct effects.
- **Labor income impact** – Labor income includes all forms of employment income and encompasses employee compensation and proprietor income.
- **Multiplier** – A multiplier captures the inter-industry effects from a change to a primary sector. A value greater than one indicates a positive impact on the economy for every dollar or job created.
- **Output impact** – An output effect measures the total value of a business's production and equals revenues.
- **Personal consumption expenditures** – Personal consumption is the amount of income available for consumption after taxes and savings.
- **Tax on corporations** – Corporation taxes include dividends and corporate profits.
- **Tax on households** – Household taxes include income, fines and fees, motor vehicle license, property, and fishing and hunting.
- **Tax on production** – Production taxes include sales, property, motor vehicle licenses, severance, other related taxes.
- **TIPU sector** – The TIPU sector includes transportation, information, and public utilities.
- **Total impact** – A total effect adds the direct, indirect, and induced effects to estimate the full impact on a regional economy.





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About the Center

This report was produced by The Center for Economic Development and Business Research (CEDBR), part of the W. Frank Barton School of Business at Wichita State University. We are a reliable resource for local, state and national demographic and economic data. We strive to enhance economic growth and development through our applied and objective research, which makes us an active and well-respected partner with economic development leaders.