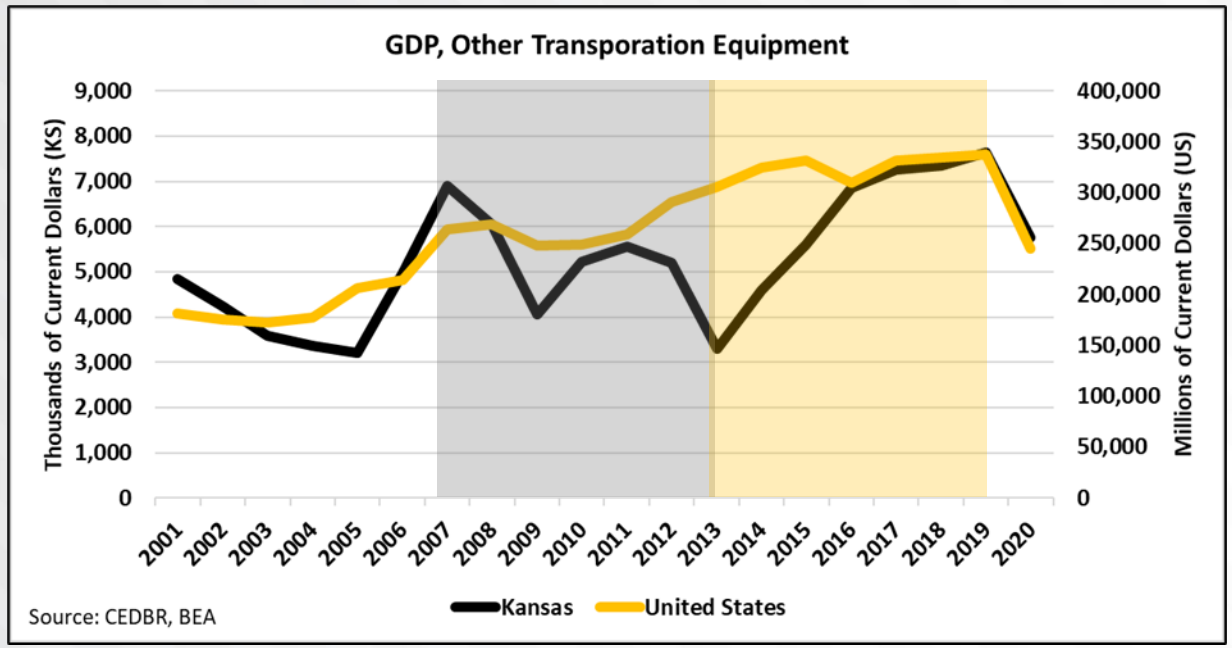
Aerospace – Trends

Transportation Equipment

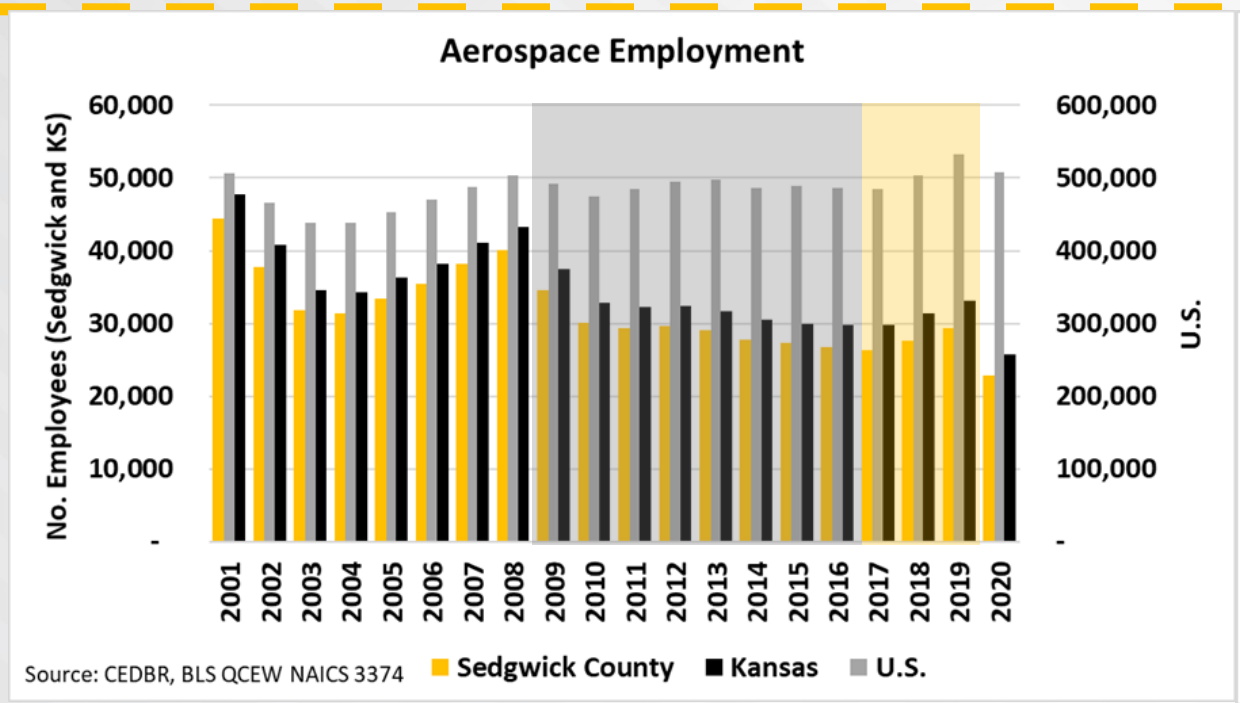


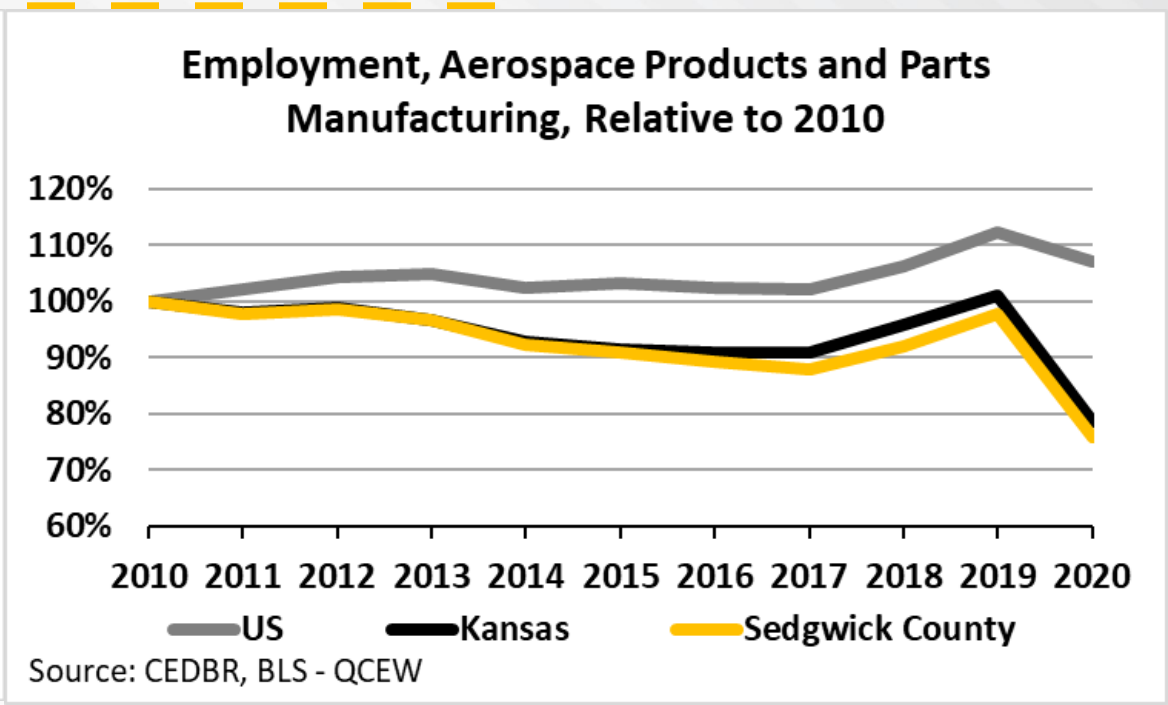
Change in GDP, Year to Year				
	Wichita Durable Goods	Sedgwick County Durable Goods	Kansas OTE	United States OTE
2014	27.3%	29.9%	39.6%	6.2%
2015	16.6%	17.4%	22.1%	2.1%
2016	17.0%	17.9%	22.4%	-6.8%
2017	3.6%	4.2%	6.1%	7.2%
2018	2.0%	1.8%	1.2%	0.9%
2019	4.5%	4.4%	3.9%	0.9%
2020	-22.5%	-23.6%	-24.7%	-27.6%
2014 - 2019 Average	**11.8%**	**12.6%**	**15.9%**	**1.8%**

Source: CEDBR, BEA

- 2007-2013 - Industry restructuring
- 2013-2019 - Increased demand
- 2020 - COVID

Aerospace Employment

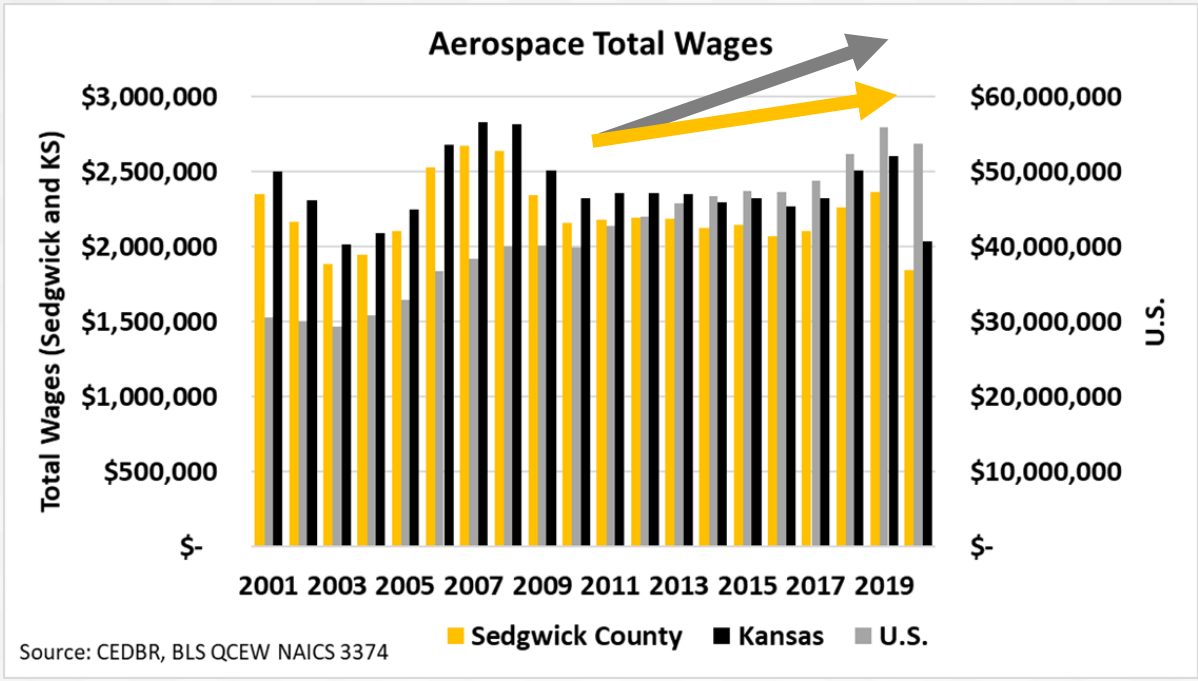




- 2009-2017-shift in labor utilization and skills
- 2017-2019- delayed race for labor
- COVID – (-20.3%)

CEDBR

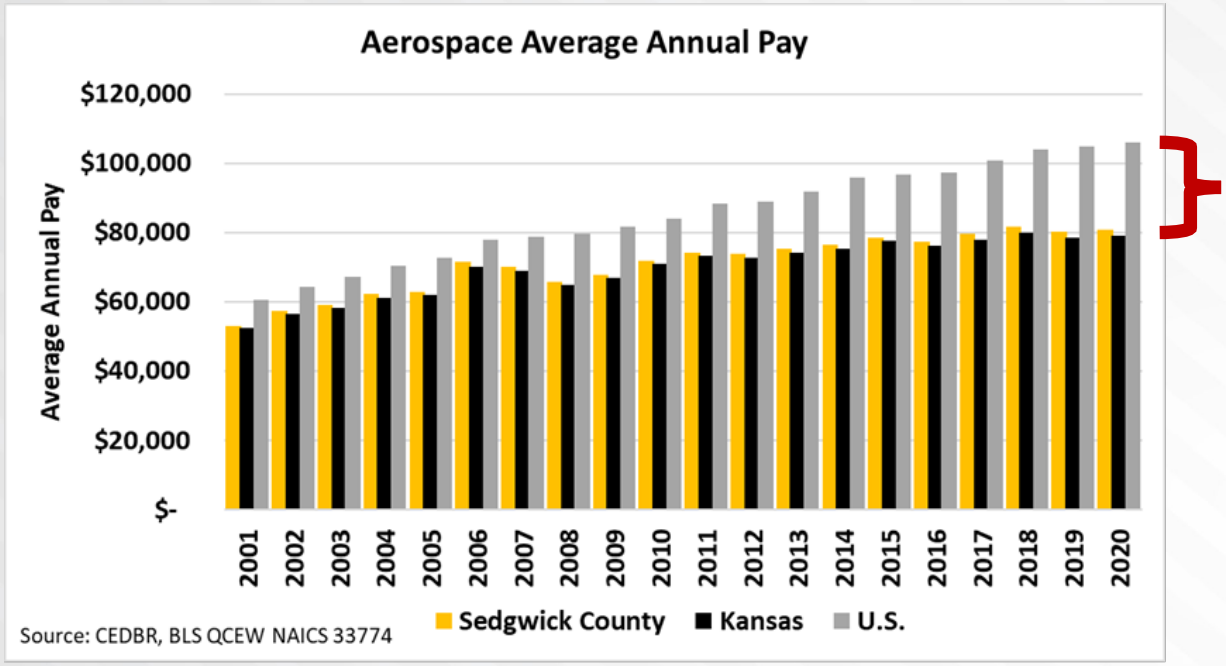
Aerospace Wages

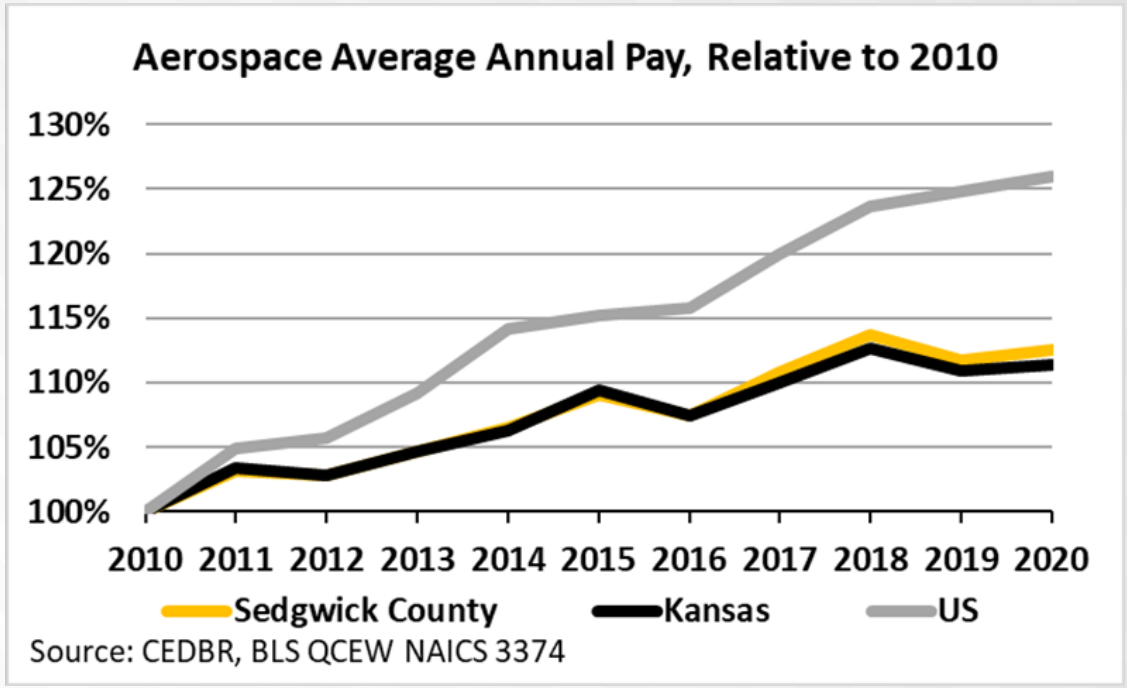


- Total wages fell behind the nation
- Labor compensation remains on a steady incline
- Decreased productivity 2018 and 2019 was mostly a function of increased labor

CEDBR

Average Annual Wages

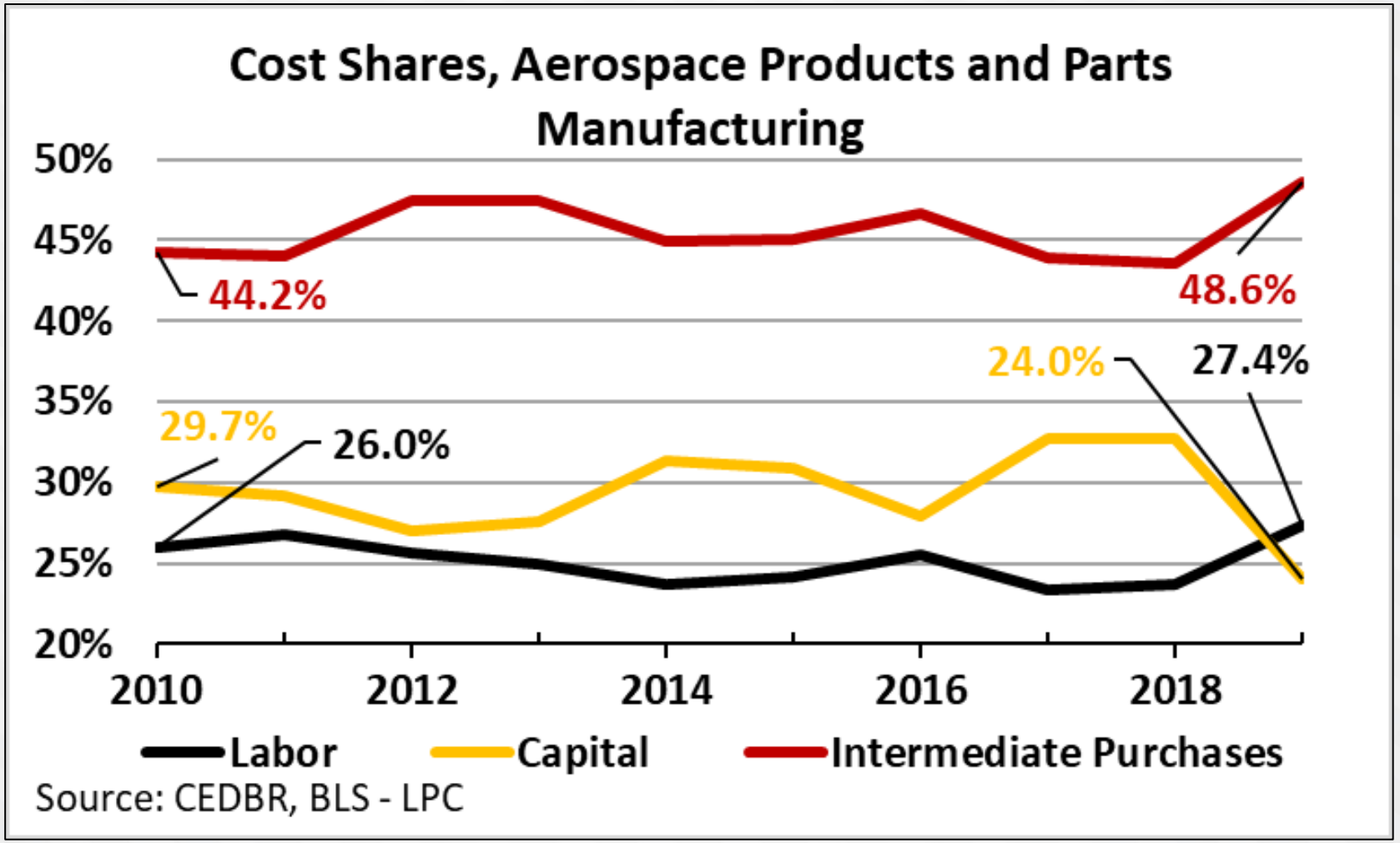




- Widening wage gap
  - Some of this is explained by the labor composition

CEDBR

US trends in the cost of production



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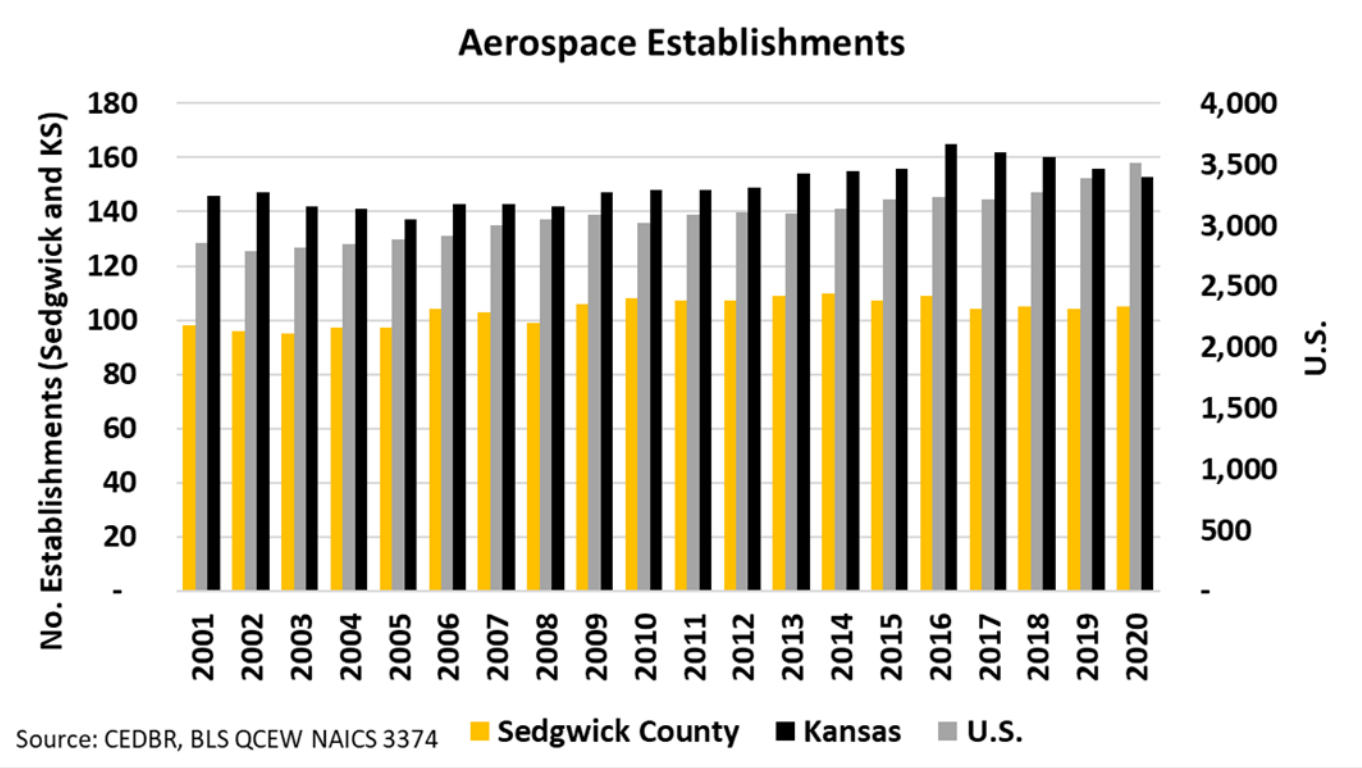
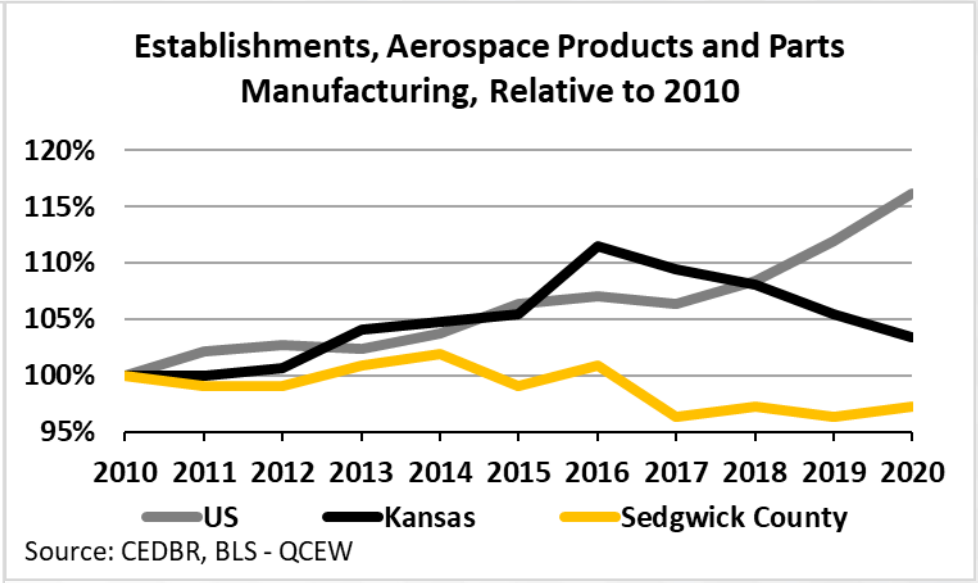
Aerospace Establishments



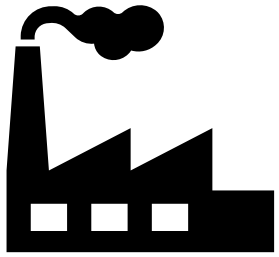


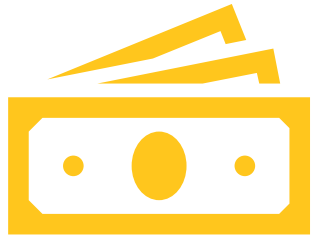
- Decline is mostly explained by industry restructuring

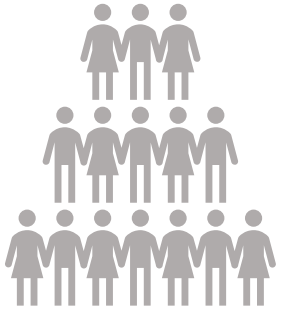
Summary

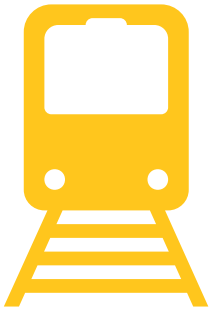
- Kansas Aerospace employment and output fell behind the nation over last decade.
- Kansas Aerospace wages are no longer completive.
- The share of labor input costs have been rising after multiple years of capital investment.
- The Kansas Aerospace industry was trending up prior to COVID.

Aerospace Impact





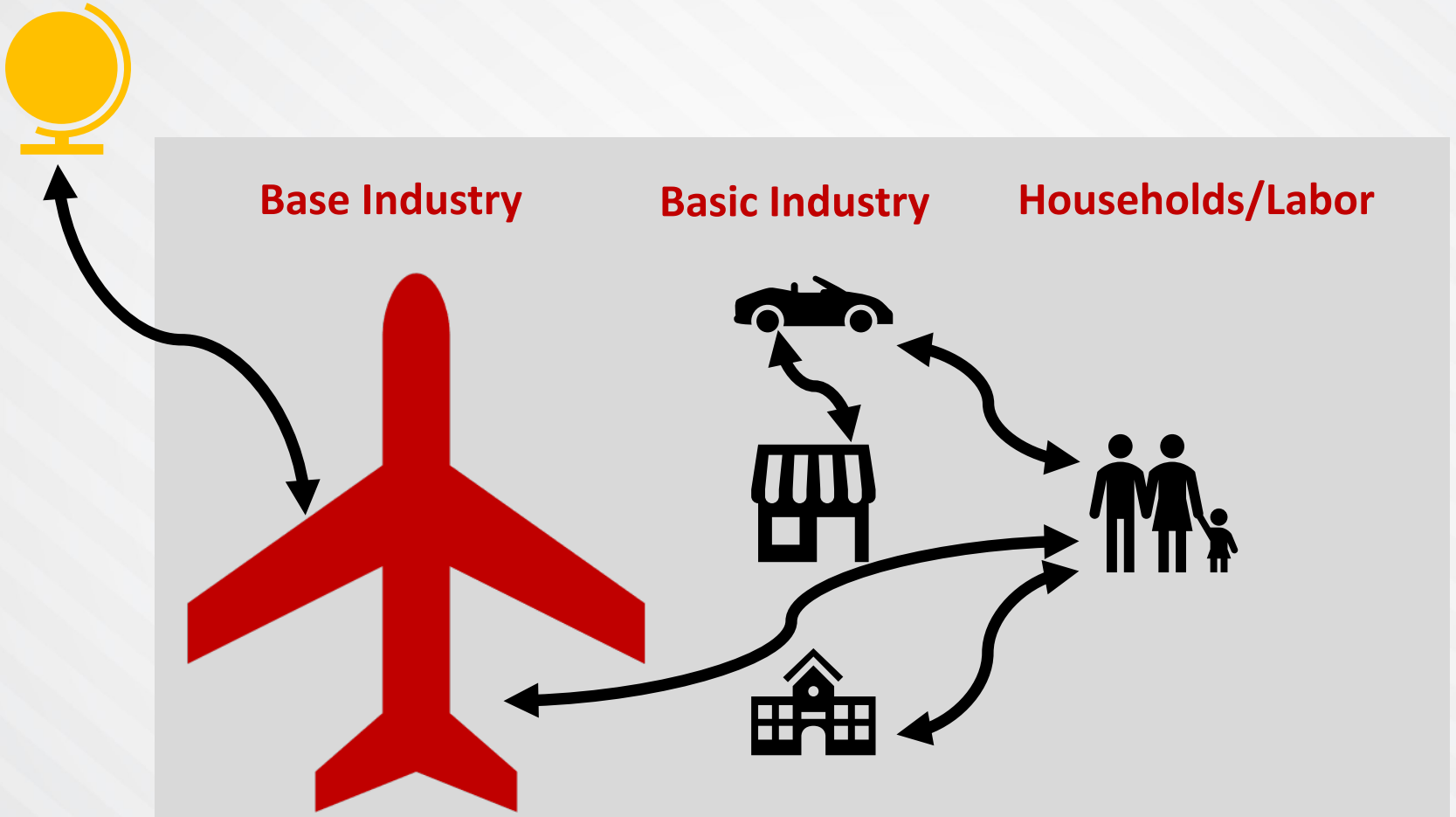




What are the economic interconnections of Aerospace and the regional economy?

- **Firms (supply chain)**
- **Labor markets**
- **Government**
- **Community**
- **Infrastructure (e.g. roads)**
- **Quality of life**
- **Universities**
- **Schools**
- **Financial system**

When does an industry drive a regional economy?



CEDBR

What should be included as aerospace?

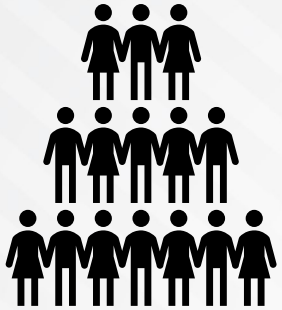
- **Supply-chain?**
  - Original Equipment Manufacturer (OEM)
    - Tier one
    - Tier two
    - Tier three
- **Summation of aerospace products and parts?**
  - But this leaves out the following:
    - Fabricated metals
    - Machining
    - Marketing
    - Engineering
    - Warehouse/distribution

Aerospace Product and Parts Manufacturing - 3364

- **Components**
  - Aircraft Manufacturing
  - Aircraft Engine and Engine Parts Manufacturing
  - Other Aircraft Parts and Auxiliary Equipment Manufacturing
  - Guided Missile and Space Vehicle Manufacturing
  - Guided Missile and Space Vehicle Propulsion Unit and Propulsion Unit Parts Manufacturing
  - Other Guided Missile and Space Vehicle Parts and Auxiliary Equipment Manufacturing
- **Limitations**
  - Potential undercounting of the market (e.g. aerospace engineering)

Kansas Aerospace Products and Parts: Direct Impact

Direct



33,182
Jobs

$2.8 billion
Labor Income

$8.1 billion
Output

Flow through the economy

	Jobs	Labor Income	Output
Indirect	7,317	$508.5 million	$1.6 billion
Induced	15,866	$748.1 million	$2.5 billion

Multiplier

- **Employment 1.7**
  - For every 100 aerospace workers, the industry supports additional 70 jobs within the Kansas economy.
- **Labor Income 1.5**
  - For every $1,000 spent on wages, the state economy benefits from an additional $455 in income.
- **Output 1.5**
  - For every million in production, aerospace supports an additional $504,448 firm sales.

Total Impact

Aerospace Impact				
	Direct	Indirect	Induced	Total
Employment	**33,182**	**7,317**	**15,866**	**56,365**
Income	**$ 2,763,972,177**	**$ 508,494,601**	**$ 748,122,206**	**$ 4,020,588,985**
Output	**$ 8,142,361,892**	**$ 1,640,840,872**	**$ 2,466,554,608**	**$ 12,249,757,372**

Source: CEDBR

Fiscal Impact					
	Employee Compensation	Proprietor Income	Tax on Production and Imports	Households	Corporations
Total State and Local Tax	$430,951	$0	$194,718,805	$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	**$466,024,442**	**$9,102,383**	**$219,514,287**	**$367,466,272**	**$55,319,627**

Source: CEDBR (2022$)

Perspective – 22%

Share of labor income supported by Aerospace in Kansas

Detailed Impacts

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

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$)

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$)

CEDBR