

ECONOMIC IMPACT

of Southwest Airlines' Operations
at Denver International Airport in 2019

FINAL DRAFT OF OCTOBER 20, 2021

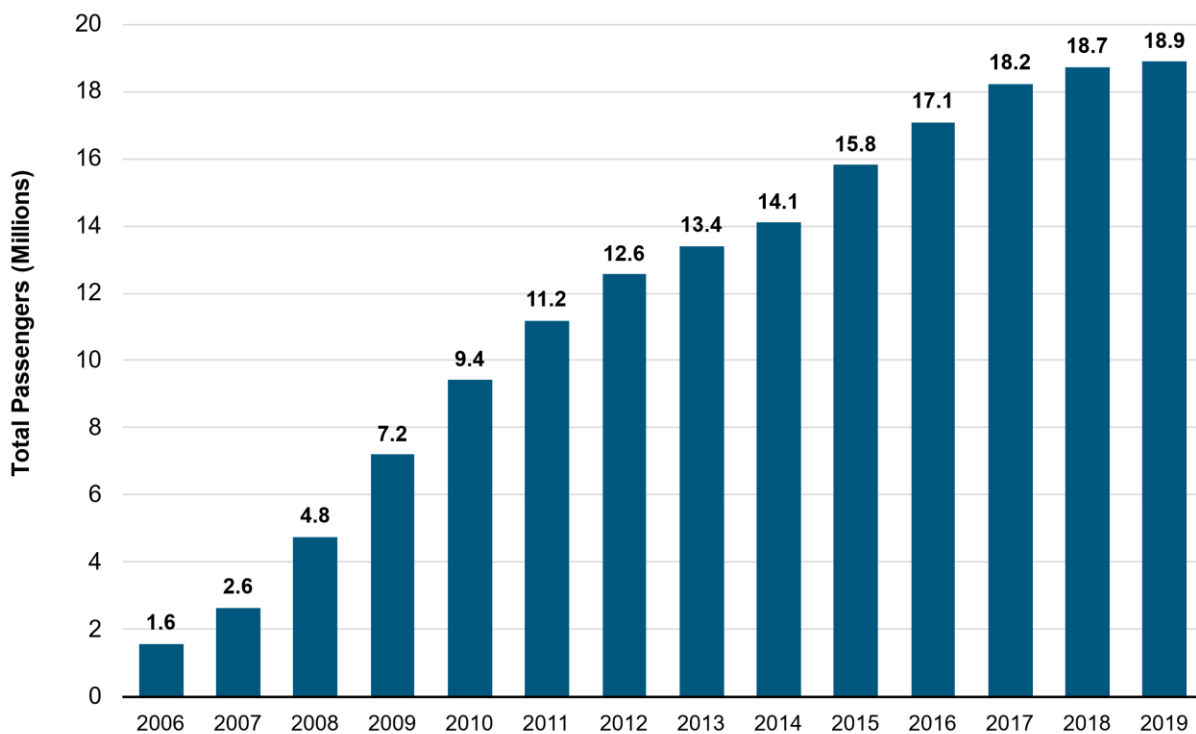


Executive Summary

Southwest Airlines (Southwest) is celebrating 15 years of service at Denver International Airport (DEN) and 50 years of business operations. To commemorate the 15-year anniversary, DEN commissioned InterVISTAS Consulting Inc. (InterVISTAS) to complete an economic impact assessment of Southwest’s operations on the State of Colorado, based on the air carrier’s operations in the state in 2019. Air services and economic activity are closely associated, as airport- and airline-related businesses create employment and wages and attract businesses to the area. Economic impact studies are means to measure and communicate the role of air transportation services and their substantial contributions to local communities and the region.

Since Southwest began operations at DEN in 2006, the carrier has grown significantly. In 2006, Southwest carried 1.6 million enplaned and deplaned (total) passengers at DEN, equivalent to 3% of the airport’s total passenger traffic. By 2019, Southwest handled nearly 19 million total passengers at DEN, becoming the second largest carrier and accounting for 27% of the airport’s enplaned and deplaned (total) passenger traffic. **Figure ES-1** summarizes the growth in Southwest’s passenger traffic at DEN over time.

Figure ES-1: Southwest’s Passenger Traffic at DEN, 2006-2019



Source: Denver International Airport

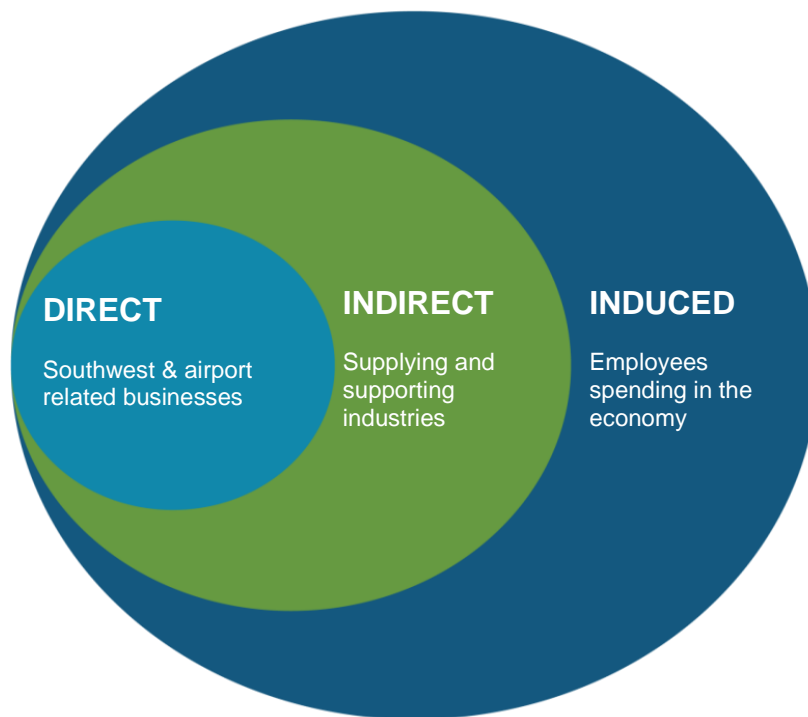
What is Economic Impact?

Economic impact is a measure of the spending and employment associated with a sector of the economy (e.g., air transportation), a specific project (such as the construction of a new facility), or a change in government policy or regulation. In this case, economic impact refers to the economic contribution associated with the activities of Southwest at DEN, which includes airline and airport-related operations, spending by visitors arriving in Colorado on Southwest, and on-airport capital investment.

Economic impact can be measured in various ways including employment, income, Gross Domestic Product (GDP), and economic output. The importance of Southwest's operations at DEN is highlighted through the lens of these four measures. All of these are used to express the gross level of activity or expenditure. Although they are not "net" measures that weigh benefits against costs, these measures can be useful in developing an appreciation of projects, investments, and economic sectors.

The three major components of economic impact of this study are classified as *direct*, *indirect*, and *induced* impacts, which collectively capture the economic benefits of Southwest to the State of Colorado's economy. **Figure ES-2** illustrates the various elements that account for the economic impact generated and facilitated by Southwest.

Figure ES-2: Categories of Economic Impact Generated and Facilitated by Southwest







2019 Economic Impact of Southwest Operations at DEN

Southwest’s operations at DEN contribute significantly to the State of Colorado’s economy. Air transportation services facilitate economic development within communities by attracting business, creating employment opportunities, and paying wages, which in turn are spent in the local communities and further drive economic activity.

Direct Economic Impacts

Combining the *direct impacts* associated with Southwest’s operations, visitor spending and capital investment, it is estimated that the carrier directly accounts for 45,100 jobs in the State of Colorado in 2019, as shown in **Figure ES-3**. These employees earn approximately \$2.2 billion in wages. In addition to employment and wages, the carrier directly contributes a total of \$4.1 billion to state-wide GDP and generates \$6.7 billion in direct economic output to the State of Colorado’s economy.

Figure ES-3: Combined Direct Economic Impact of Southwest at DEN (Operations, Visitor Spending and Capital Investment), 2019

				
Component	Employment (Jobs)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
Operations	9,100	\$820	\$1,790	\$2,980
Visitor Spending	35,800	\$1,320	\$2,260	\$3,670
Capital Investment	200	\$20	\$20	\$40
Total Direct Impacts	45,100	\$2,150	\$4,070	\$6,690

Note: Totals may not sum due to rounding.





Combined Economic Impacts

The previous section presented the direct economic impacts related to operations, visitor spending and capital investment of Southwest at DEN. However, the economic impact of the air carrier does not end there, as other sectors of the economy are dependent on Southwest and other airport-related direct employers’ businesses. This includes indirect impacts in businesses that supply the goods and services to the direct activities linked to Southwest’s operations, and induced impacts resulting from direct and indirect employees spending their wages in the general economy. Combined, the indirect and induced

effects are commonly referred to as the “multiplier effects.” Both the indirect and induced effects were estimated using the IMPLAN model, which is an industry standard for estimating economic impacts.¹

Including multiplier impacts, Southwest supports a total economic impact (direct, indirect, and induced) of 77,100 jobs earning \$4 billion in wages, along with \$7.1 billion in total GDP and \$12.2 billion in total economic output across the State of Colorado. This encompasses the scale of economic activity involved with Southwest, from airport operations to the spending in the region by visitors arriving on Southwest to the capital investment by the carrier and DEN to support ongoing operations in 2019. **Figure ES-4** summarizes the total combined economic impacts of Southwest in Colorado in 2019.

Figure ES-4: Combined Total Economic Impact of Southwest at DEN (Operations, Visitor Spending and Capital Investment), 2019

				
Component	Employment (Jobs)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
Direct	45,100	\$2,150	\$4,070	\$6,690
Indirect	15,100	\$940	\$1,430	\$2,810
Induced	16,800	\$870	\$1,600	\$2,760
Total Impacts	77,100	\$3,960	\$7,110	\$12,250

Note: Totals may not sum due to rounding.

Tax Revenue Impacts

Southwest’s operations, associated economic activity, and visitor spending impacts yield significant contributions to government revenues. Revenue contributions are divided into the three broad groupings, based on the origins of the resulting impacts:

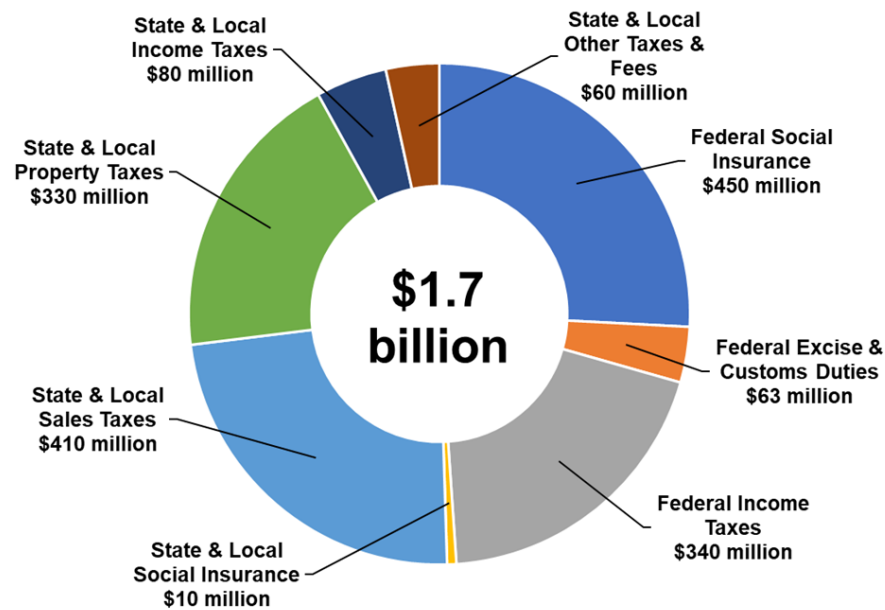
1. **Taxes Related to Employee Compensation.** This category includes the federal, state, and local impacts of Social Insurance taxes paid by employers and employees associated directly or via multiplier effects with Southwest’s operations. It contains the tax impacts generated by retirement plans, temporary disability insurance, and workers’ compensation payments. These taxes contribute largely to federal government streams; however, smaller contributions are made to state and local governments, as well.

¹ The economic multipliers used in this study were based on the 2019 Input-Output (I-O) multipliers maintained by IMPLAN for the State of Colorado.

2. **Taxes Related to Household Income.** This category contains the personal tax impacts generated by households related directly or via multiplier effects to Southwest’s operations. They include all applicable personal income tax payments.
3. **Other Taxes and Fees.** These relate to taxes and fees that are paid by corporations and individuals to federal, state, and local levels of government.² The state and local impacts contain fines and fee charges, motor vehicles licensing fees, property taxes, and other applicable taxes.

Economic activity by Southwest’s operations and visitor spending generates tax revenue for all levels of government. In 2019, total tax contributions to all levels of government were approximately \$1.7 billion. State and local governments received \$890 million (51%), and the federal government received \$850 million (49%). **Figure ES-5** provides a breakdown of total tax impacts by level of government.

Figure ES-5: Government Revenues from Southwest’s Operations and Visitor Spending, 2019



Community Impacts

In 2019, nearly \$1.1 million in donations and investment was contributed by Southwest to almost 260 organizations in local communities. This includes donations, sponsorships, community partnerships, etc. Close to 500 employees volunteered over 15,300 hours in 2019, supporting 190 organizations.

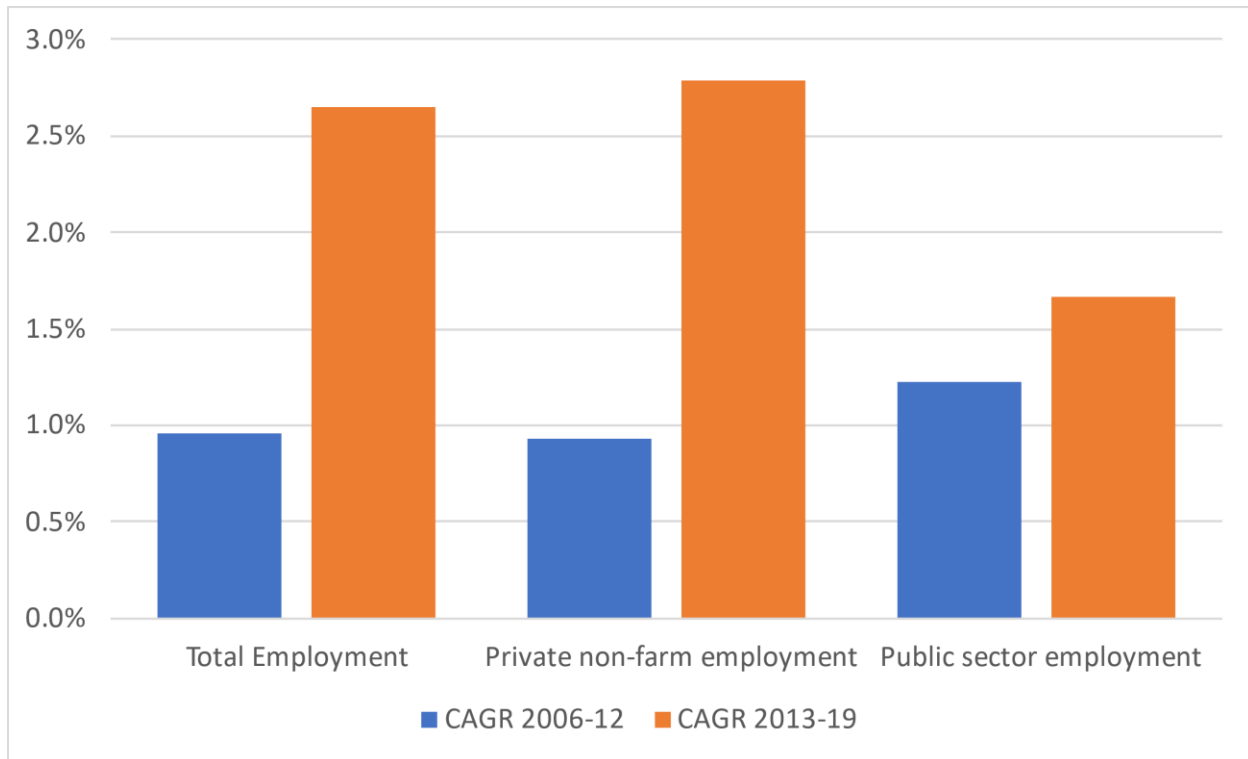
² These includes all payments to governments other than payroll and end of year income taxes, such as excise, sales, fees and fines, and licenses and permits.

Wider Impacts on the Regional Economy

The greater Denver region has experienced significant growth in population and employment over the recent past. Between 2010 and 2019, the area was the 12th fastest growing region in the U.S. by population. The Denver metropolitan area by itself has become the 19th largest in the country, with a population of nearly 3 million. When the wider region is included, the population rises to 3.6 million.³

Employment growth accelerated rapidly in the past few years as the economy bounced back from the Great Recession. **Figure ES-6** summarizes the differences in the compound annual growth rates for total employment, total private (nonfarm) employment, and public sector employment for the periods 2006-2012 vs. 2013-2019. It highlights the acceleration in private sector employment growth.

Figure ES-6: Difference in Compound Annual Growth Rates (CAGR), Major Employment Categories in the Greater Denver Combined Statistical Area



Source: U.S. Bureau of Economic Analysis (BEA)

Certain industry sectors have a relatively great reliance on air transport as a part of their business. For many businesses, passenger and cargo transportation services are intermediate purchases used to facilitate production or sales. For example, business staff may need air transportation to meet with clients

³ U.S. Bureau of Economic Analysis (BEA)

and provide goods and services. Academic research and information from U.S. Bureau of Economic Analysis (BEA) quantify the extent to which some industry sectors have relatively great dependence on commercial aviation. Those sectors include:

- Finance and insurance;
- Real estate;
- Professional, scientific, and technical (PST) services;⁴
- Management of companies and enterprises;
- Administrative and support and waste management and remediation services;
- Information; and
- Government and government enterprises.

From 2013 through 2019, total employment in the greater Denver region grew by 20%.⁵ Some specific industry sectors grew by exceptional amounts and rates, including

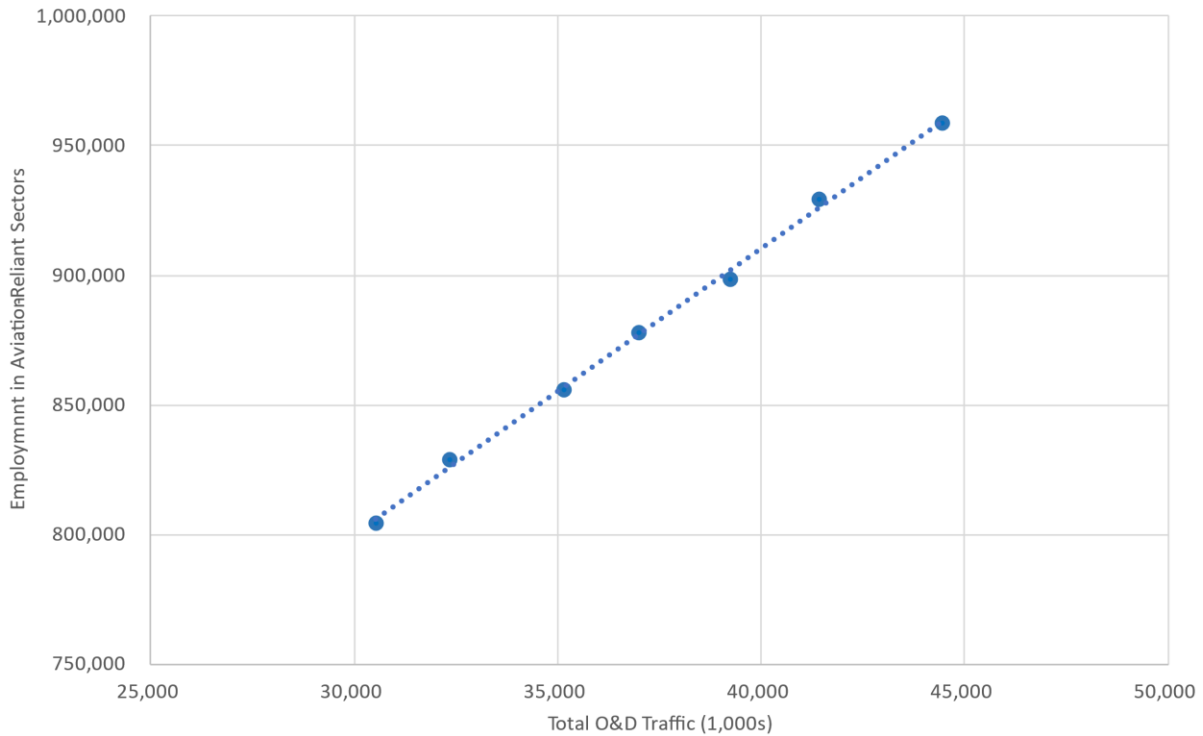
- PST (+58,000 jobs, +27%),
- Transportation and Warehousing (+55,000 jobs, +86%),
- Management of Companies and Enterprises (+11,000 jobs, +31%), and
- Real estate and Rental & Leasing (+31,000 jobs, +26%).

These sectors represent many for which the Denver region demonstrates significant strength. Thus, there is an exceptional synergy between the region's economic strengths and the air services – and market reach – provided at Denver International Airport. **Figure ES-7** summarizes the highly correlated relationship between total origin and destination (O&D) traffic at DEN and employment in “aviation-reliant” industries for the period 2013-2019.

⁴ The PST sector includes services like architecture, engineering, and scientific research (e.g., life sciences, nanotechnology, and biotechnology.)

⁵ U.S. Bureau of Economic Analysis (BEA)

Figure ES-7: Employment in Aviation-Reliant Industries and Total DEN O&D Traffic is Highly Correlated



Source: InterVISTAS analysis of data from U.S. Bureau of Economic Analysis (BEA) and Diio Mi by Cirium.

While correlation does not establish causation, academic research on the role of air transportation in facilitating economic activity consistently shows that increases in air service *leads to* significant increases in regional growth, especially in “high value” service and trade-related industries such as finance, legal, information technology, consulting, business management and chemical sectors.

Southwest’s operations support all economic activity in the region by connecting businesses to markets and bringing business and leisure visitors to the State. In particular, in the Denver area, Southwest’s operations support the technology, government and defense, finance, telecommunications, and consulting industries. It is not a coincidence that as Southwest’s operations and traffic increased, employment in those industries also expanded.

Without question, Southwest’s impacts on the State of Colorado extend far beyond the airport’s property line. Ranging from its charitable contributions through the impacts on bringing family and visitors to the state through enabling businesses to expand their markets and local employment, Southwest’s contributions to the entire region are impressive, growing, and far-reaching.

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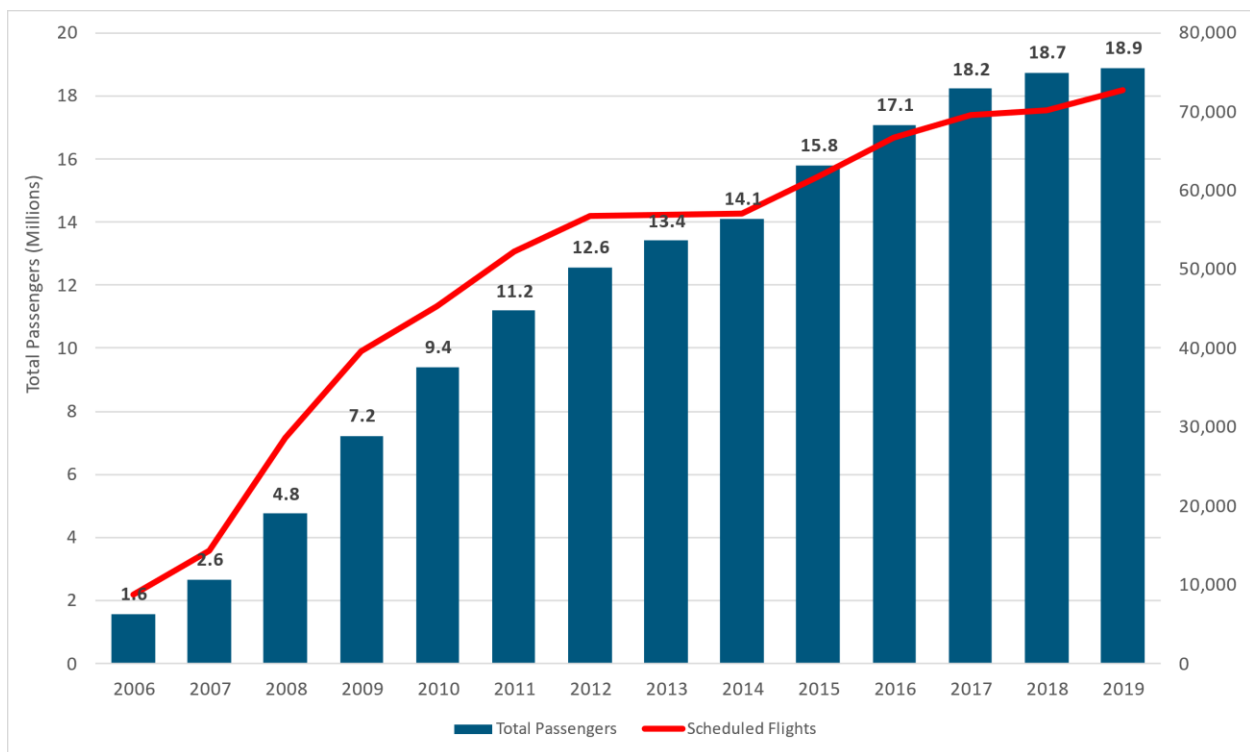
1 Introduction

Southwest Airlines is celebrating 15 years of service at Denver International Airport (DEN) and 50 years of business operations. To commemorate the 15-year anniversary, DEN commissioned InterVISTAS Consulting Inc. (InterVISTAS) to undertake an economic impact assessment of Southwest on the State of Colorado, based on the air carrier’s operations at DEN in 2019. Air services and economic activity are closely associated, as airlines and airport-related businesses create employment and wages and attract businesses to the area. Economic impact studies are important tools in communicating the role of air transportation services and their substantial contributions to local communities and the region.

1.1 Southwest Airlines’ Operations at DEN

Since Southwest began operations at DEN in 2006, the carrier has seen significant growth. In 2006, Southwest scheduled 8,700 flights and carried 1.6 million enplaned and deplaned (total) passengers at DEN, equivalent to 3% of the airport’s total passenger traffic. By 2019, Southwest’s DEN operations had expanded to nearly 73,000 annual flights and it carried nearly 19 million total passengers, becoming the second largest carrier and accounting for 27% of the airport’s total passenger traffic. **Figure 1-1** summarizes Southwest’s flights and passenger traffic at DEN from 2006-2019.

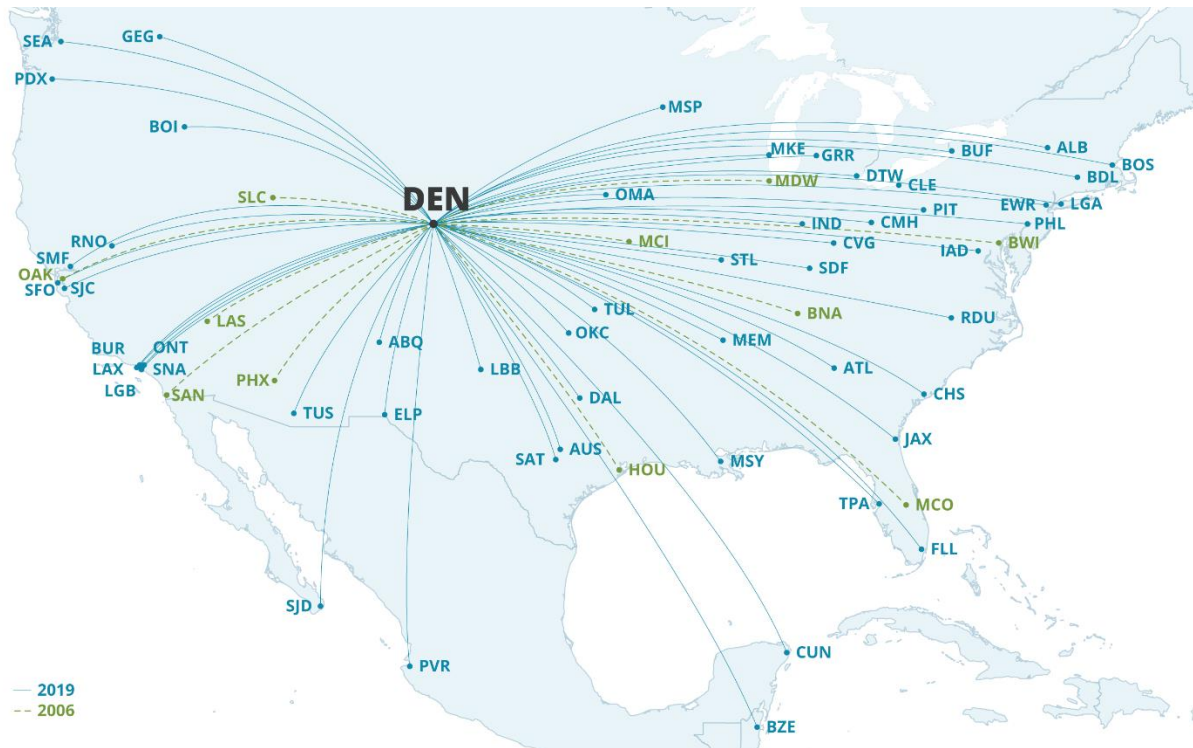
Figure 1-1: Southwest’s Scheduled Flights and Passenger Traffic at DEN, 2006-2019



Source: Denver International Airport, Diio Mi by Cirium

In 2006, Southwest operated to 11 domestic markets. By 2019, its operations had expanded to 65 U.S. markets and four international destinations in Mexico and Central America. **Figure 1-2** displays the map of markets served by Southwest in 2019. It also highlights the growth in the number of markets served since 2006.

Figure 1-2: Southwest’s Markets Served with Nonstop Flights from DEN



Source: Denver International Airport, Diio Mi by Cirium

1.2 What is Economic Impact?

Economic impact is a measure of the spending and employment associated with a sector of the economy (e.g., air transportation), a specific project (such as the construction of a new facility), or a change in government policy or regulation. In this case, economic impact refers to the economic contribution associated with the activities of Southwest at DEN, which includes airline and airport-related operations, spending by visitors arriving in Colorado on Southwest and on-airport capital investment.

Economic impact can be measured in various ways including employment, income, Gross Domestic Product (GDP), and economic output, as summarized in **Figure 1-3**. The importance of Southwest’s operations at DEN is highlighted through the lens of these four measures. All of these are used to express the gross level of activity or expenditure. Although they are not “net” measures that weigh benefits against costs, these measures can be useful in developing an appreciation of projects, investments, and economic sectors.

Figure 1-3: Measurements of Economic Impact

<p>Employment (Jobs)</p>	<ul style="list-style-type: none"> • The number of jobs employed by businesses directly or indirectly linked to activities and operations of Southwest at DEN. • The employment figure includes full-time, part-time and seasonal employment.
<p>Wages</p>	<ul style="list-style-type: none"> • The wages, salaries, bonuses, benefits and other remuneration earned by people linked to activities and operations of Southwest at DEN.
<p>Gross Domestic Product (GDP)</p>	<ul style="list-style-type: none"> • The value of the operating surpluses (i.e. the "value-add") of businesses linked to activities and operations of Southwest at DEN, plus the remuneration and net indirect taxes paid to government.
<p>Economic Output</p>	<ul style="list-style-type: none"> • The total gross spending (i.e. capital improvement plus revenue) by firms, organizations and individuals involved in activities linked to operations of Southwest at DEN, including intermediate consumption.

1.3 Categories of Economic Impact

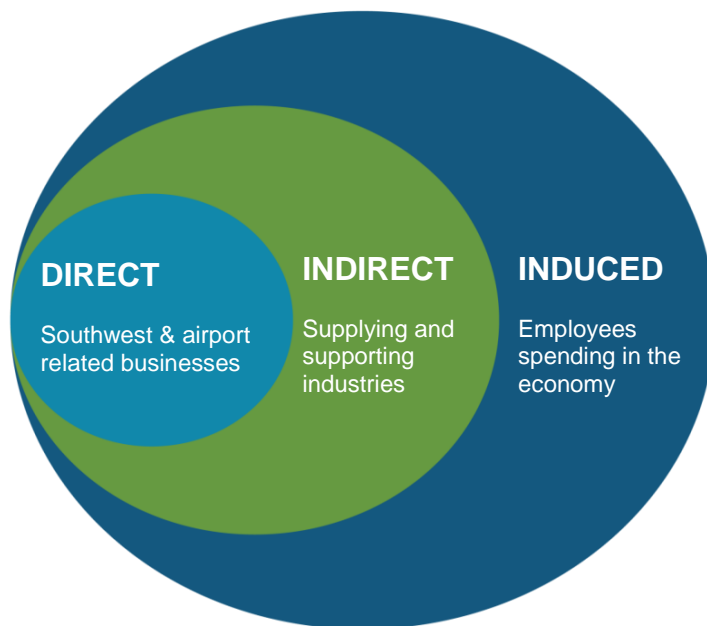
The three major components of economic impact of this study are classified as *direct*, *indirect*, and *induced* impacts, which collectively capture the economic benefits of Southwest to the State of Colorado's economy. **Figure 1-4** illustrates the various elements that account for the economic impact of Southwest.

- **Direct** impacts account for the economic activity of the target sector itself. Direct employment impacts are measured by counting those individuals who work in a particular sector of the economy. In the case of an airline, the people who work for the airline itself either at the airport or in a corporate capacity (e.g., headquarters operations, flight crew training) are considered direct employment (e.g., ground handling, gate agents, etc.). This includes contractors who work for Southwest. In addition, there are those employees who work at the airport whose positions are attributable to Southwest's operational needs and passengers' interests. These include, for example, employees of the concessionaires who work at the restaurants and the Transportation Security Administration (TSA) agents who screen Southwest's passengers. Spending by visitors arriving in the State of Colorado on Southwest on accommodations, food/beverage, retail, and local transportation, among others are

also considered direct impacts, as well as on-airport capital expenditures invested by Southwest and DEN to support the carrier’s operations.

- **Indirect** impacts are those that result because of the direct impacts. This involves employment, wages, GDP, and economic output generated by industries that arise from the presence of Southwest at DEN. For example, indirect employment could include suppliers of food for in-flight catering or parts needed for aircraft maintenance (i.e., any businesses that supply or provide services to the carrier).
- **Induced** impacts are economic impacts created by the spending of wages, salaries, and profits earned by those working in direct and indirect economic activities related to Southwest’s operations at DEN. For example, induced impacts would include an airline employee’s purchases of consumer goods such as food, clothing, electronics, etc. Induced impact is often called the “household-spending effect”.
- **Total** impacts are the sum of direct, indirect, and induced effects.

Figure 1-4: Categories of Economic Impact Generated and Facilitated by Southwest



1.4 Approach to the Analysis

InterVISTAS cooperated closely with DEN and Southwest to assemble and analyze a wide range of data on the airline's employment, operations, and passenger traffic. Southwest provided the study team with information on its employment and operations. DEN provided data on total employment at the airport. Southwest also provided the team with information on all services for which it had contracted with outside vendors or suppliers for services at the airport. This includes, for example, all workers handling baggage at the airport, cabin cleaning and janitorial, wheelchair assist, and other services. The total value of the contracts for each service was recorded.

To estimate the indirect and induced impacts of Southwest's operations, InterVISTAS applied the IMPLAN model – the model most used in the U.S. for estimating economic impacts.⁶ The economic multipliers used in this study were based on the 2019 Input-Output (I-O) multipliers maintained by IMPLAN for the State of Colorado.

InterVISTAS' estimates of the total impact of visitor spending on Colorado's economy was based on traffic data from Southwest and other information on visitor spending from the Colorado Tourism Office and Visit Denver.

The study's approach is discussed in detail in **Appendix A**.

⁶ IMPLAN is an economic impact assessment software system. The system traces its roots to the U.S. Forest Service, which needed an analytic tool to better understand the resource outputs of alternative land management strategies. Responsibility for IMPLAN (short for "impact analysis for planning") eventually shifted to the University of Minnesota before it was established as an independent corporation (then known as the Minnesota IMPLAN Group, or MIG) for developing and selling all future iterations of the IMPLAN database and software. The name changed to IMPLAN in 2013.

2 Economic Impact of Southwest's Operations at Denver International Airport

Southwest's operations at DEN contribute significantly to the State of Colorado's economy. Air transportation services facilitate economic development within communities by attracting business, creating employment opportunities, and paying wages, which in turn are spent in the local communities and further drive economic activity.

2.1 Direct Economic Impacts of Operations

A wide range and significant number of individuals are involved in the arrival and departure of each flight at an airport – servicing the aircraft, as well as the passengers and cargo onboard. This includes employees onsite at the airport terminal such as airline gate agents, airline crew, ground handlers, air traffic controllers, cleaners, aircraft maintenance engineers, immigration and customs officers, retail cashiers, fixed base operators, airport authority staff members, and many more. There is also relevant direct employment at firms that are located off airport, and the associated employment of ground transportation firms and accommodation providers that service passengers of the airport.

There are two distinct elements to Southwest's direct employment contributions to the State of Colorado:

1. The core stems from the operations of Southwest itself. This consists of the flight crew, corporate management, maintenance employees, and all other employees who serve passengers and support the airline's operations at DEN. Outside vendors or suppliers that Southwest contracts services for, such as aircraft cleaning services for which Southwest contracts with another firm, are also included.
2. Second, Southwest's operations generate additional impacts that are *separate from but directly attributable to* its operations. These include a share of the employment at DEN that serve the airline's operational needs and passengers' interests. These include, for example, employees of concessionaires who work at the restaurants and the Transportation Security Administration (TSA) agents who screen Southwest's passengers.

Direct employment related to Southwest's operations at DEN in 2019 amounted to 9,100 direct jobs, earning an estimated \$820 million in wages. This is equivalent to an average of roughly \$90,100 per job, which is 46% more than the average statewide income of \$61,800 for all workers in Colorado.⁷

The direct employment from Southwest's operations at DEN generated nearly \$1.8 billion in direct GDP and close to \$3 billion in direct economic output in 2019. The summary of the direct economic impact of Southwest's operations at DEN is summarized in **Figure 2-1**.

⁷ U.S. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Colorado Statewide All Industries, 2019.

Figure 2-1: Direct Impact of Southwest’s Operations at DEN, 2019

Component	Employment (Jobs)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
Direct	9,100	\$820	\$1,790	\$2,980

2.2 Indirect and Induced Economic Impacts of Operations

The previous section presented the direct economic impacts related to operations of Southwest at DEN. However, the economic impact of the air carrier does not end there, as other sectors of the economy are dependent on Southwest and other airport-related direct employers’ businesses. This includes indirect impacts in businesses that supply the goods and services to the direct activities linked to Southwest’s operations, and induced impacts resulting from direct and indirect employees spending their wages in the general economy. Combined, the indirect and induced effects are commonly referred to as the “multiplier effects.” Both the indirect and induced effects were estimated using the IMPLAN model.

2.2.1 Indirect Impacts

Indirect impacts are generated by suppliers to Southwest and other airport-related businesses directly associated with Southwest’s operations at DEN. Based on the application of economic multipliers, it was estimated that 6,100 jobs were indirectly related to Southwest’s operations at DEN in 2019. The wages associated with the total indirect employment is estimated at \$390 million. In 2019, indirect GDP contribution is estimated at \$570 million and economic output at \$1.1 billion.


2.2.2 Induced Impacts

The induced impacts are results of demand for goods and services (e.g., spending in the general economy) generated by wages of those directly or indirectly linked to Southwest’s operations at DEN. The induced employment attributable to Southwest’s operations at DEN in 2019 is estimated at 6,700 jobs, generating \$340 million in wages. Induced GDP and economic impact contributions amount to \$630 million and \$1.1 billion, respectively, in 2019.

2.3 Total Economic Impacts of Operations

In 2019, operations of Southwest at DEN generated a total of 21,900 jobs and \$1.6 billion in wages, including induced and indirect effects. Including multiplier effects, operations of Southwest at DEN supported \$3 billion in total GDP and \$5.2 billion in total economic output. **Figure 2-3** summarizes the direct, indirect, induced, and total impact of employment and wages in the State of Colorado’s economy attributable to operations of Southwest at DEN, as well as GDP and economic output contributions.

Figure 2-2: Total Impact of Southwest Operations at DEN, 2019



Component	Employment (Jobs)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
Direct	9,100	\$820	\$1,790	\$2,980
Indirect	6,100	\$390	\$570	\$1,130
Induced	6,700	\$340	\$630	\$1,080
Total Impacts	21,900	\$1,550	\$2,990	\$5,190

Note: Totals may not sum due to rounding.

3 Economic Impact of Visitors Arriving in Colorado on Southwest

3.1 Visitor Spending in Colorado

A separate but related element of the airline's operations that generates employment impacts on Colorado flows from the spending by the millions of business and leisure visitors who arrive at DEN on Southwest. Those visitors' spending supports employment in the hospitality industry: accommodations, restaurants, retail, local transportation, and recreation and entertainment industries. The economic impact of visitor spending is calculated separately.

In general, the economic impact of visitor spending is based on three major variables: the number of visitors flown into each airport, the travelers' length of stay, and the average amounts spent by those individuals.

Data on the number of visitors coming to Colorado and their length of stay came from Southwest, using information from issued tickets.

Visitor spending patterns can vary significantly. Some travelers visiting for business purposes may spend relatively larger amounts of money but stay only a day or two in a single location. Leisure travelers may be more budget conscious but stay more days and visit several parts of the state. Some visitors will spend relatively little, especially if they stay with family or friends. In sum, the total amount of visitor spending depends on visitors' average length of stay and average amounts spent.

The project team used estimates of average visitor spending available from Visit Denver and the Colorado Tourism Office. Reports prepared for both of those organizations estimated the average amount of spending by different categories of travelers. As described in **Appendix A**, the project team adjusted the estimated average spending amounts for travelers to account for spending differences between travelers who arrive by air versus those who arrive by ground transportation (e.g., bus or privately-owned car).



Impacts of Visitor Spending are Based on:

- Estimates of "true visitors"
- Average length of stay
- Average spending per person per day
 - Distribution of spending (e.g., lodging, food service, recreation, retail)

3.2 Total Economic Impacts of Visitor Spending

In 2019, Southwest carried over 5 million non-local travelers into Colorado, and they spent an average of five (5) days in the state. Data from Visit Denver and the Colorado Tourism Office indicate that these visitors spent over \$160 each, per day. As noted earlier, visitors traveling for business spent more but stayed fewer days on average than those coming for leisure purposes. In total, Southwest's visitors to Colorado brought over \$4 billion into the state's economy, divided among the different sectors shown in **Figure 3-1**.





Figure 3-1: Distribution of Spending by Visitors Arriving in Colorado on Southwest, 2019

Tourism Sector	Total Spending (\$ Millions)
Accommodations	\$1,200
Ground transportation	\$880
Food	\$840
Recreation	\$600
Retail	\$480
Total	\$4,000

This spending by non-locals arriving on Southwest generated additional economic impacts in the State of Colorado. Direct impacts come from visitor spending in accommodations, food/beverage, retail, local ground transportation, and other travel related expenditures. Multiplier impacts include, for example, suppliers of amenities, housekeeping products, and bed and bath linens for accommodations providers in Denver. Further spending by employees of firms directly or indirectly involved with tourism and hospitality (e.g., restaurant workers and restaurant supply companies) creates induced impacts.

Including indirect and induced impacts, annual visitor spending associated with visitors arriving in Colorado on Southwest supports a total of 54,700 jobs and \$2.4 billion in total labor income throughout the State of Colorado. Furthermore, total GDP and economic output contributions to the state's economy measured at \$4.1 billion and \$7 billion, respectively. **Figure 3-2** summarizes the total economic impacts of spending by visitors arriving in Colorado on Southwest in 2019.

Figure 3-2: Total Impact of Visitors Arriving in Colorado on Southwest, 2019

				
Component	Employment (Jobs)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
Direct	35,800	\$1,320	\$2,260	\$3,670
Indirect	8,900	\$550	\$860	\$1,670
Induced	10,000	\$520	\$960	\$1,650
Total Impacts	54,700	\$2,380	\$4,070	\$6,990

Note: Totals may not sum due to rounding.

4 Economic Impact of Related Capital Investment at DEN

4.1 Southwest's Capital Investment at DEN

In total, from 2015-2019, nearly \$200 million was spent by both Southwest and DEN in capital improvements.⁸ Capital investment includes Southwest infrastructure projects, such as a new technical operations hangar, station facilities remodel and expansion, and provisioning improvements. In addition, terminal improvements completed at DEN specifically to handle Southwest operations are accounted for the validation, design, construction, and management of the Concourse Expansion Plan for Terminal C East. At full build-out, this will include 16 new gates/holdrooms and four (4) renovated holdrooms; Southwest office and support space, including new flight operations and inflight offices; and outdoor patio at the end of Terminal C East for Southwest and other airline passengers.

4.2 Total Economic Impacts of Capital Spending


Southwest's and DEN's capital expenditures to support the carrier's operations at the airport generate additional economic impacts. The capital expenditures include spending on construction, equipment, and raw and finished materials, all of which support employment, GDP, and economic output. The economic effects of capital development are considered separately from ongoing operations because capital spending at airports tends to vary significantly over time and on a project-by-project basis. To account for this, the economic impacts of capital spending are based on the annual average expenditure over the last five years, amounting to approximately \$39.6 million annually.

This spending supported 500 jobs of total employment, along with \$40 million in earnings and \$50 million in GDP.⁹ The total economic impact of Southwest's and DEN's annual capital expenditures is summarized in **Figure 4-1**.

⁸ Capital investment over the last five years provided by Southwest Airlines and Denver International Airport.

⁹ It is assumed that all capital expenditures occur in the State of Colorado.

Figure 4-1: Annual Economic Impact of Capital Improvements at DEN Associated with Southwest



Component	Employment (Jobs)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
Direct	200	\$20	\$20	\$40
Indirect	100	\$10	\$10	\$20
Induced	200	\$10	\$10	\$30
Total Impacts	500	\$40	\$50	\$80

Note: Totals may not sum due to rounding.

5 Tax Contributions Attributable to Southwest's Operations at DEN

Southwest's operations, associated economic activity, and visitor spending impacts yield significant contributions to government revenues. Revenue contributions are divided into the three broad groupings, based on the origins of the resulting impacts:

1. **Taxes Related to Employee Compensation.** This category includes the federal, state, and local impacts of Social Insurance taxes paid by employers and employees associated directly or via multiplier effects with Southwest's operations. It contains the tax impacts generated by retirement plans, temporary disability insurance, and workers' compensation payments. These taxes contribute largely to federal government streams; however, smaller contributions are made to state and local governments, as well.
2. **Taxes Related to Household Income.** This category contains the personal tax impacts generated by households related directly or via multiplier effects to Southwest's operations. They include all applicable personal income tax payments.
3. **Other Taxes and Fees.** These relate to taxes and fees that are paid by corporations and individuals to federal, state, and local levels of government.¹⁰ The state and local impacts contain fines and fee charges, motor vehicles licensing fees, property taxes, and other applicable taxes.

This analysis does not include any estimates of taxes associated with corporate profits because of the complexity of corporate taxes and the availability of possible adjustments to taxes based on prior years' operational profits or losses.

The tax impacts on federal, state, and local governments are based on 2019 tax rates and were estimated from the IMPLAN model.

5.1 Total Tax Revenue Impacts

Economic activity by Southwest's operations generates tax revenue for all levels of government. In 2019, total tax contributions to all levels of government were approximately \$730 million.

- The State of Colorado and other local governments were the largest recipients of tax revenue, receiving approximately \$400 million (55% of total tax revenue impacts). Most of that total is attributable to sales and property taxes.
- The federal government received \$330 million (45% of total tax revenue impacts). This total is from social insurance taxes, personal income taxes, and customs and excise taxes.

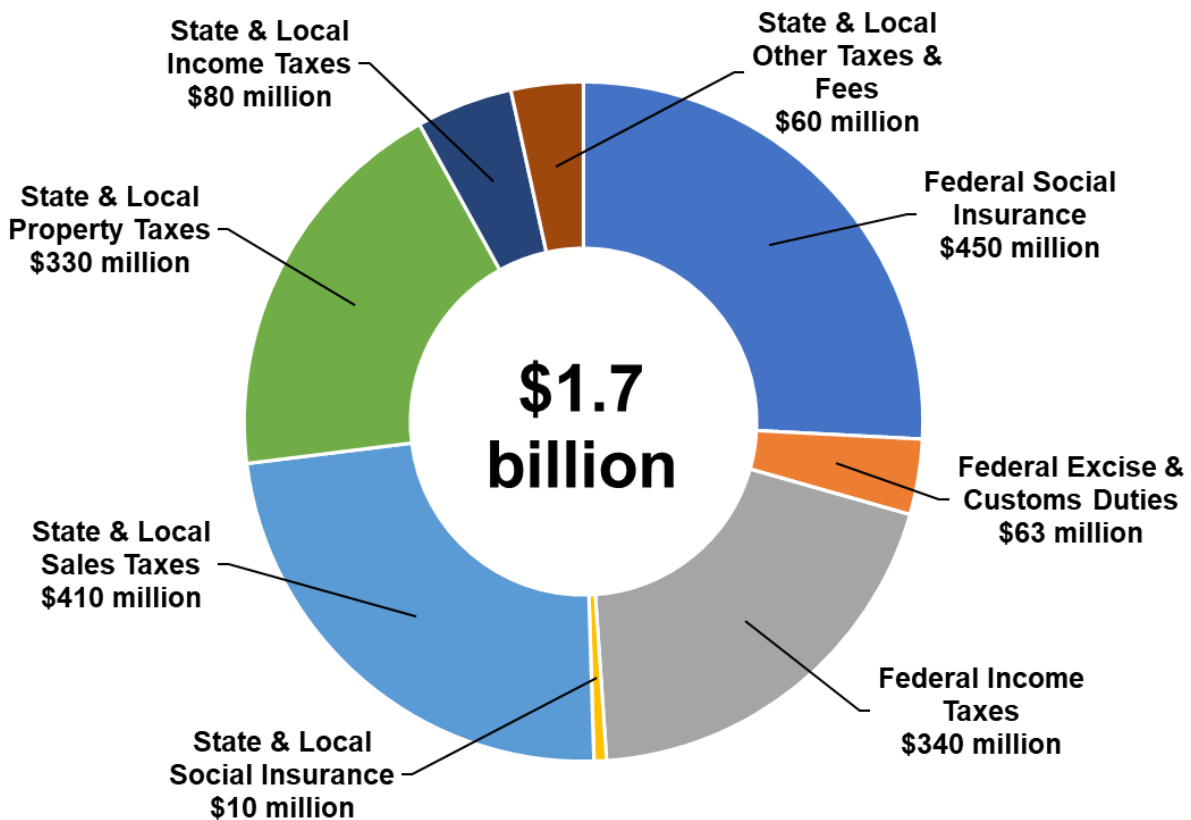
¹⁰ These includes all payments to governments other than payroll and end of year income taxes, such as excise, sales, fees and fines, and licenses and permits.

Employment and economic activity supported by visitor spending also contributed to government revenues. In 2019, these activities generated approximately \$1 billion in tax revenues to government.

- The State of Colorado and local governments received \$490 million, with about 82% of that in sales and property taxes.
- The federal government received about \$850 million, mostly in social insurance contributions and income taxes.

In total, federal, state, and local governments in 2019 received about \$1.7 billion in tax revenues associated with Southwest’s operations and visitor spending. State and local governments received \$890 million (51%), and the federal government received \$850 million (49%). **Figure 5-1** provides a breakdown of total tax impacts by level of government.

Figure 5--1: Government Revenues from Southwest’s Operations and Visitor Spending, 2019



Separate from government revenue contributions related to airline operations and associated visitor spending, passengers at commercial airports operated by public agencies, such as Denver International Airport, may also pay a fee called the Passenger Facility Charge (PFC).

Airlines collect PFC from airline passengers as part of the airline ticket purchase to help commercial service airports pay for capital development projects such as construction or improvement of runways, terminals, and roadways. PFCs can also be used to fund projects to improve safety, security, or capacity; reduce noise; or increase air carrier competition. The Federal Aviation Administration (FAA) is responsible for approving airports' requests to impose PFCs and the respective infrastructure projects to be funded by such fees. By law, PFCs cannot currently exceed \$4.50 per flight segment and must be collected as part of the airline ticket purchase – typically, along with other taxes and fees that are included in the airline ticket price.

According to data from Southwest, in 2019 it collected PFCs totaling nearly \$33 million.

6 Community Impacts of Southwest in the State of Colorado

Southwest is an active contributor to community causes within the State of Colorado. The carrier supports nearly 260 community organizations through monetary and in-kind donations and sponsorships to volunteer hours of its staff members. Southwest aligns its efforts with significant initiatives and issues in the community, supporting organizations related to health care, education, arts and culture, environment/conservation, disaster preparedness and relief, diversity and inclusion, community development, and military/veterans' services, among others. Southwest also has a "Tickets for Time" program, where in one complimentary roundtrip ticket is donated for every 40 hours volunteered by its employees with a qualified organization.¹¹

In 2019, Southwest contributed nearly \$1.1 million in donations and investment to local communities. Close to 500 employees volunteered over 15,300 hours in 2019, supporting 190 organizations, as shown in **Figure 6 1**.

Figure 6-1: Community Investment by Southwest in Colorado, 2019

Year	Giving Metrics		Volunteer Metrics		
	Total Investment (\$ Millions)	Organizations Supported	Total Volunteer Hours	Number of Employee Volunteers	Organizations Supported by Volunteers
2019	\$1.06	260	15,300	500	190

Source: Southwest Airlines

¹¹ 2019 Southwest Airlines One Report

7 Broader Economic Benefits from Southwest’s Operations at DEN

Commercial air services play a significant role in facilitating economic growth and development. Beyond the obvious connection to the tourism and hospitality industries that directly benefit from spending by visitors who arrive by air, commercial air transport is a critical intermediate element of the production process of a wide spectrum of industries. Air transport provides connections to export markets for both goods and services. It offers access to new markets which in turn enables businesses to achieve greater economies of scale. Air access also enables companies to attract and retain high quality employees. Furthermore, a key factor many companies consider when making decisions about the location of offices, manufacturing plants or warehouses is proximity of an airport. This yields additional benefits to direct users and generates further positive impact on the performance and economic activity of the region. **Figure 7-1** summarizes the broader benefits of air connectivity on regional economic development.

Figure 7-1: Regional Economic Development Impacts Facilitated by Air Services



7.1 Growth in the Region’s Population and Employment

The greater Denver region experienced significant growth in population and employment over the recent past. Between 2010 and 2019, the area was the 12th fastest growing region in the U.S. by population. The Denver metropolitan area by itself has become the 19th largest in the country, with a population of nearly 3 million. When the wider region is included, the population rises to 3.6 million. Total employment approached 2.6 million in 2019.¹²

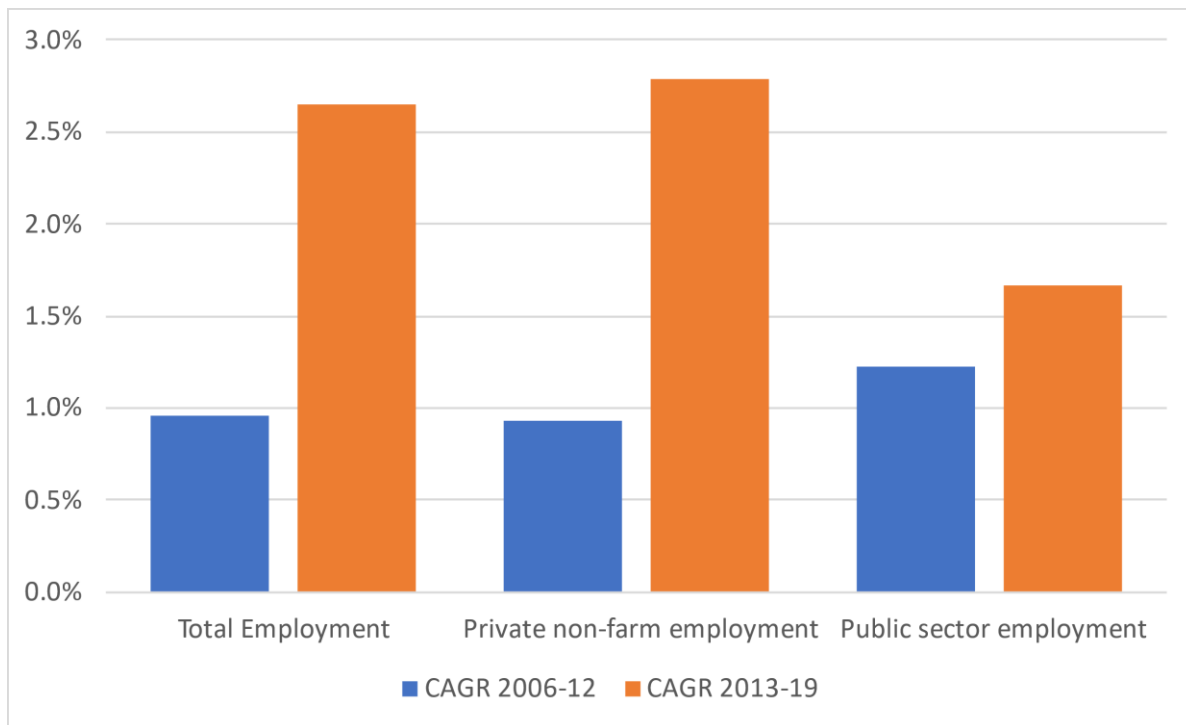
The period from 2006-2012 was characterized nationally by the Great Recession, which began in December 2007 and lasted until June 2009, a period of 18 months. This was the most severe year-over-year decline in consumption since 1945. The consumption slump was both deep and long lived. It took

¹² U.S. Bureau of Economic Analysis (BEA)

almost 12 quarters for total real personal consumption expenditures to go back to its level at the previous peak in 2007. The recovery was considered by some to be uncharacteristically weak. (NBER 2011)

Figure 7-2 summarizes the differences in the compound annual growth rates for total employment, total private (nonfarm) employment, and public sector employment for the periods 2006-2012 vs. 2013-2019. It highlights the acceleration in private sector employment growth during the latter period.

Figure 7-2: Difference in Compound Annual Growth Rates, Major Employment Categories in the Greater Denver Combined Statistical Area



Source: U.S. Bureau of Economic Analysis (BEA)

Since 2013, total employment in the greater Denver region grew by 20%.¹³ Some specific industry sectors grew by exceptional amounts and rates:

- Three sectors each added over 40,000 jobs: Professional, Scientific, and Technical Services (PST)¹⁴ (+58,000 jobs, +27%); Transportation and Warehousing (+55,000 jobs, +86%); and Construction (+48,000 jobs, +39%).

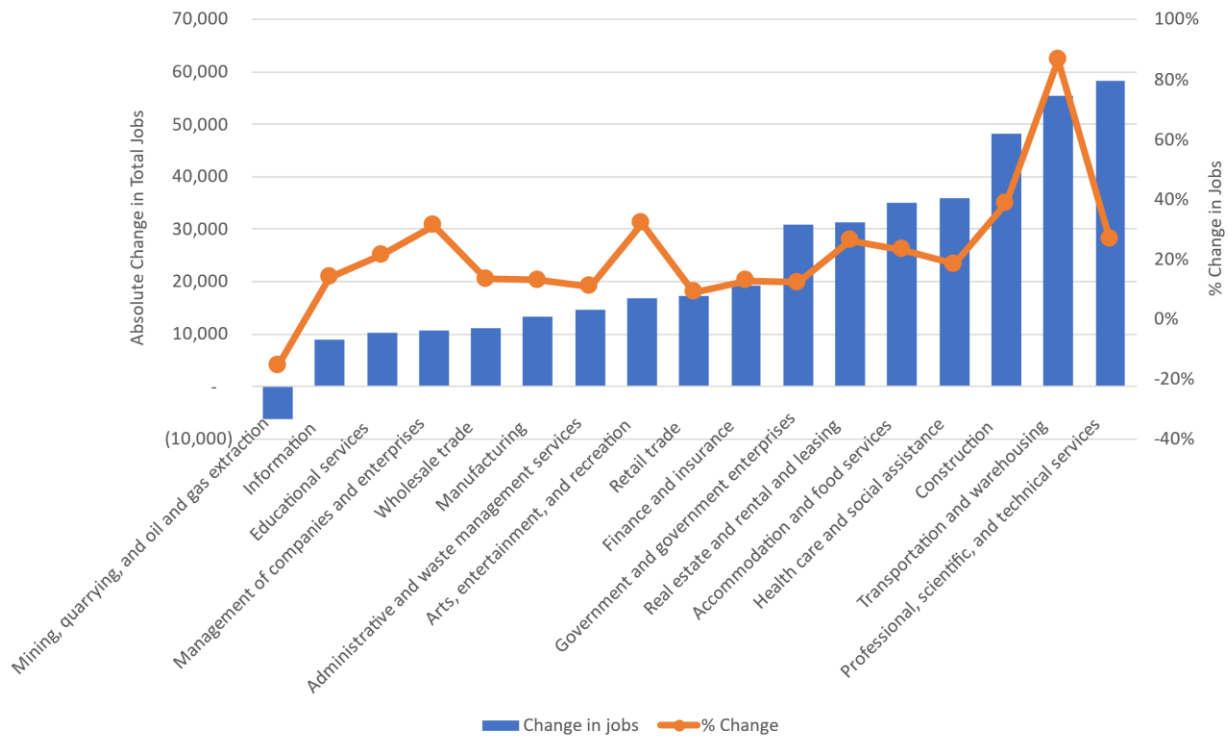
¹³ U.S. Bureau of Economic Analysis (BEA)

¹⁴ The PST sector includes services like architecture, engineering, and scientific research (e.g., life sciences, nanotechnology, and biotechnology.)

- Two other sectors grew by over 30%: Arts, Entertainment; and Recreation (+17,000 jobs, +32%) and Management of Companies and Enterprises (+11,000 jobs, +31%)
- In line with the growth in total regional population, the Real estate and Rental & Leasing sector added 31,000 jobs (+26%).

Figure 7-3 highlights the absolute and percentage changes in major industry sectors' employment growth from 2013 through 2019 for the greater Denver region. It vividly illustrates the large increases in total employment in the PST, transportation and warehousing, and construction sectors. The only sector to experience a loss of jobs over the period was mining, quarrying, and oils and gas extraction.

Figure 7-3: Absolute and Percentage Changes in Employment by Industry Sector, 2013-2019, Greater Denver Combined Statistical Area (sorted by change in total employment)



Source: U.S. Bureau of Economic Analysis (BEA)

7.2 Regional Economic Strengths

Different regions or cities possess different economic attributes or strengths. These may arise from a region's location or geography (e.g., port cities, locations with mineral deposits, political capitals, etc.). Others may arise due to differentials in the key factors of production that include land, labor, and capital. A competitive advantage in any of these factors can trigger an economy of scale capable of generating higher wages and productivity levels in certain places.

Airport-based regions can be defined in terms of the dominant economic characteristic surrounding the airport. One approach to analyzing the economic strength of the broader airport region is to identify its pre-dominant industry and occupation-based economic clusters. An economic cluster can be broadly defined as a geographic concentration of interrelated, competitive firms and related institutions (e.g., universities) that are of sufficient scale to generate external economies. These external economies can reduce costs or accelerate rates of innovation through efficiencies tied to geographic proximity. This can yield market insights, knowledge spillovers, larger pools of specialized talent, and faster deployment of new knowledge.

The U.S. Cluster Mapping Project, research run through the Harvard Business School and funded by the U.S. Economic Development Administration, provides nationally consistent benchmark clusters that can be used to assess the presence of clusters in local economies.¹⁵ For the Denver area, the Cluster Mapping Project notes that the region's business activity in the following clusters all rank within the top 5% of U.S. metropolitan statistical areas (MSAs) (listed in order of total area employment):

- Business Services (e.g., corporate headquarters, computer services, engineering services, consulting services, architectural and drafting services, etc.)
- Distribution and Electronic Commerce (e.g., warehousing and storage, wholesale of electrical and electronic goods, professional and commercial equipment and supplies, etc.)
- Financial Services (e.g., credit intermediation, financial investment activities, securities brokers, dealers and exchanges, etc.)
- Hospitality and Tourism (e.g., accommodations and related services)
- Transportation and Logistics (e.g., air transportation, trucking, ground transportation support activities, etc.)
- Education and Knowledge Creation (e.g., colleges, universities, and professional schools; training programs, research organizations, etc.)
- Information Technology and Analytical Instruments (e.g., software publishers, electronic components, process and laboratory instruments, etc.)

Several other clusters are also listed in the top 5% nationally, including Insurance Services; Marketing, Design, and Publishing; and Performing Arts.

¹⁵ <https://www.clustermapping.us/cluster>

7.3 Industry Reliance on Air Transportation

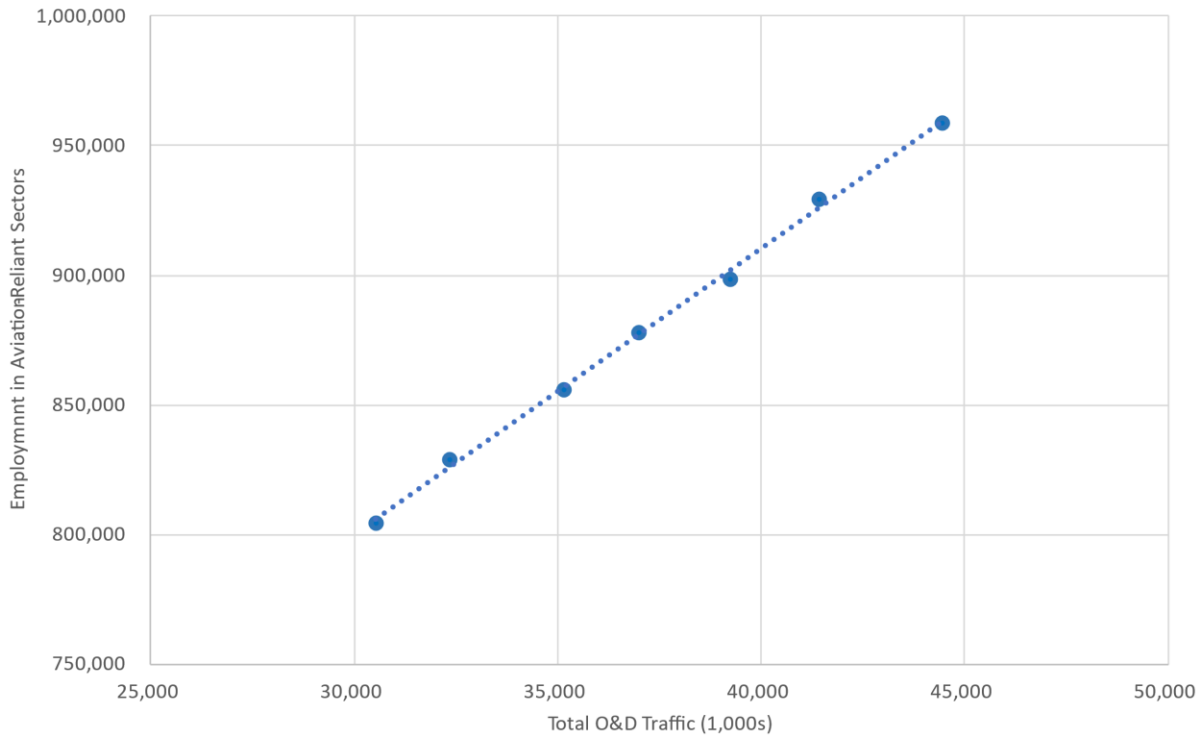
Certain industry sectors have a relatively great reliance on air transport as a part of their business. For over two decades, academic researchers have examined the extent to which activity in different sectors benefit from expanding commercial air service. For businesses, passenger and cargo transportation services are intermediate purchases used to facilitate production or sales. For example, business staff may need air transportation to meet with clients and provide goods and services. Similarly, a company may acquire an electronic component shipped by air that is part of a larger product. After production, that product may be sent by air to a customer.

Information from the U.S. Bureau of Economic Analysis (BEA) quantifies the extent to which different industries rely on commercial aviation as critical intermediate components of their final goods and services offerings. Based on the academic research and information from BEA, some of the industry sectors that have relatively great dependence on commercial aviation include:

- Finance and insurance;
- Real estate;
- Professional, scientific, and technical (PST) services;
- Management of companies and enterprises;
- Administrative and support and waste management and remediation services;
- Information; and
- Government and government enterprises.

These sectors represent many for which the Denver region demonstrates significant strength. Thus, there is an exceptional synergy between the region's economic strengths and the air services – and market reach – provided at Denver International Airport. **Figure 7-4** summarizes the relationship between total O&D traffic at DEN and employment in “aviation-reliant” industries for the period 2013-2019. There is a high degree of correlation between the two.

Figure 7-4: Employment in Aviation-Reliant Industries and Total DEN O&D Traffic is Highly Correlated

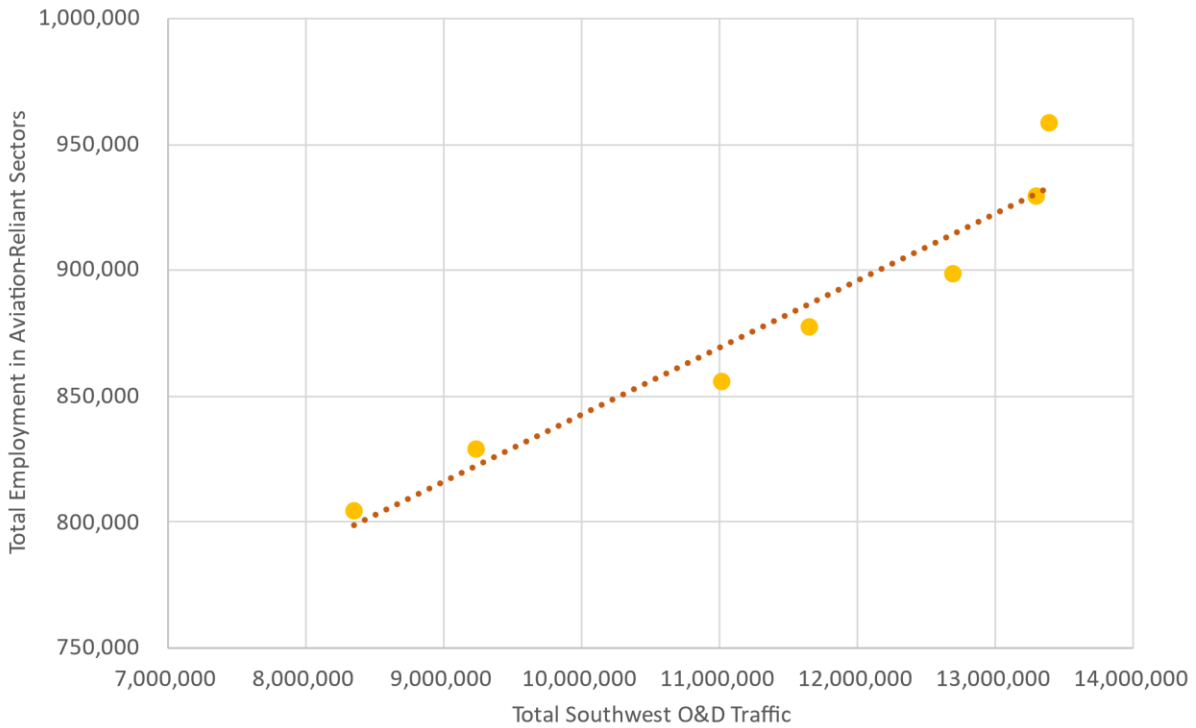


Source: InterVISTAS analysis of data from U.S. Bureau of Economic Analysis (BEA) and Diio Mi by Cirium.

While correlation does not establish causation, the bulk of recent academic research on the role of air transportation in facilitating economic activity consistently shows that increases in the number of markets served had positive impacts on a region’s total number of jobs, number of business establishments, and average wages. Other research shows that increases in air service leads to statistically and economically significant increases in regional growth, especially in service and trade-related industries and in economic clusters considered “high value” such as finance, legal, information technology, consulting, business management, and chemical sectors.

Southwest’s operations support all economic activity in the region by connecting businesses to markets and bringing business and leisure visitors to the state. In particular, Southwest supports certain key industries in the Metro Denver region that depend on air services. These include (but are not limited to) technology, government and defense, finance, consulting, and telecommunications. These are among those noted above that are both particularly aviation-reliant and those that have grown significantly since 2013. **Figure 7-5** shows the relationship between Southwest’s growing O&D traffic and increasing regional employment in aviation-reliant industries.

Figure 7-5: Employment in Aviation-Reliant Industries and Southwest’s O&D Traffic at Denver is Highly Correlated



Source: InterVISTAS analysis of data from U.S. Bureau of Economic Analysis (BEA) and Diio Mi by Cirium.

Without any question, the same highly correlated relationship exists between Southwest’s traffic and regional employment in aviation-reliant sectors. It is not a coincidence that as Southwest’s operations and traffic have increased, employment in those industries have also expanded.





8 Summary

8.1 Combined Overall Economic Impacts

Combining the impacts associated with Southwest's operations, visitor spending and capital investment, it is estimated that the carrier directly accounts for 45,100 jobs in the State of Colorado in 2019, as shown in **Figure 8-1**. These employees earn approximately \$2.2 billion in wages. In addition to employment and wages, Southwest directly contributes a total of \$4.1 billion to state-wide GDP and generates \$6.7 billion in direct economic output to the State of Colorado's economy.

Including multiplier impacts, Southwest supports a total economic impact (direct, indirect, and induced) of 77,100 jobs earning \$4 billion in wages, along with \$7.1 billion in total GDP and \$12.3 billion in total economic output across the State of Colorado. This encompasses the scale of economic activity involved with Southwest, from airport operations to the spending in the region by visitors arriving on Southwest to the capital investment by the carrier and DEN to support ongoing operations in 2019.

Figure 8-1: Combined Economic Impact of Southwest at DEN (Operations, Visitor Spending and Capital Investment), 2019

				
Component	Employment (Jobs)	Wages (\$ Millions)	GDP (\$ Millions)	Economic Output (\$ Millions)
Direct	45,100	\$2,150	\$4,070	\$6,690
Indirect	15,100	\$940	\$1,430	\$2,810
Induced	16,800	\$870	\$1,600	\$2,760
Total Impacts	77,100	\$3,960	\$7,110	\$12,250

Note: Totals may not sum due to rounding.

Beyond these impacts, Southwest's operations facilitated the growth in business activity and employment, especially in the region surrounding Denver. Since 2013, although total employment in the greater Denver region grew by 20%, some industry sectors that are reliant upon air transportation services grew by rates far above that average.¹⁶ Southwest's expanding operations support businesses in all sectors of the state's economy but especially in several that are aviation dependent. As Southwest's operations and traffic have increased, employment in those industries have also expanded.

¹⁶ U.S. Bureau of Economic Analysis (BEA)

Appendix A: Approach and Methodology

InterVISTAS' project team benefited from close cooperation from both DEN and Southwest. The team obtained and analyzed a wide range of data from the airline. These data cover Southwest's employment and wages for its corporate and airport-based staff and the amount of spending that the airline devoted to contractors that provided necessary services both at the airport (e.g., gate handling, baggage services) and at its corporate headquarters. The team also obtained and analyzed data from Southwest on its total Colorado-oriented passenger traffic (e.g., the directionality of traffic flows), which informed estimates of visitor-related spending impacts. Other areas of interest included but were not limited to maintenance activities, contracted services, and corporate investments (both on-airport and off-airport). From DEN, the project team obtained counts of employees who were authorized to work on airport property. The team used that information and other data on aircraft operations and passenger traffic to model estimates of the amount of on-airport employment that can be attributed to Southwest's operations.

Estimating Other Employment at Airports Attributable to Southwest

Airports employ hundreds or thousands of individuals that serve important governmental and commercial functions in support of all airlines that operate at that facility. These "common" or "shared" employees would include government employees (e.g., FAA air traffic controllers, TSA agents, or CBP officers), employees of airport concessionaires (e.g., food services and retail), and employees of ground transportation firms (e.g., airport shuttle drivers, rental car companies), and others.

Some percentage of this employment at each airport is directly attributable to Southwest and the passengers it carries. For example, some portion of the concessionaires' business is associated with Southwest's passengers. Similarly, the amount of TSA or CBP staffing at the airport depends in large measure on the volume of individuals who must be screened through the security checkpoints and evaluated for entry into the U.S. Some staffing in these organizations is more closely correlated with the volume of passengers that move through the terminal, and some more closely correlated with aircraft operations.

The project team had readily available information on total employment from DEN. These data were available by firm or organization. These included:

1. Airport management;
2. Airlines;
3. Other government agencies (including such organizations as the Federal Aviation Administration's air traffic controllers, the Transportation Security Administration, Customs and Border Protection, or local law enforcement);
4. Concessionaires;
5. Rental car companies and other ground transportation operators; and
6. Others.

The team used these data as the basis of its analysis of the non-Southwest employment attributable to the airline's operations and its partners.

The team also examined information available on government staffing models (such as CBP's staffing model), which provided some insight into how organizations not specifically focused on bottom-line financial results staff service levels at airports. The assumption was that other service providers at airports would generally staff in ways comparable to how the government does.

Estimating Multiplier Impacts

The most accepted mechanism for estimating indirect and induced economic impacts is via economic models that generate and apply multipliers that are based on national economic data and analyses.

The national data are economic "input-output" tables that quantify the linkages between industries and economic sectors – between the sales of one and the purchases of another. The data are available on national, state, regional, and county levels. They use information on goods and services and local trade. These data quantify how the purchases from one industry (in this case, airlines) drive the production from other industries (such as jet fuel, communications technology, or professional services). The model captures what each business or industrial sector must purchase from every other sector to produce a dollar's worth of goods or services. Input-output models thus create "multipliers" that are used to calculate the indirect effect on jobs, income and output generated per dollar of spending on various types of goods and services.

The project team applied the IMPLAN model to generate the estimates of the indirect aviation-related economic activity associated with Southwest's operations at DEN. The ratios and multipliers used in this study were based on the 2019 Input-Output (I-O) multipliers maintained by IMPLAN for each of the regions. These were the most current I-O multipliers available at the time of the study. The economic ratios and multipliers have been updated to reflect current price levels, but no structural changes have been assumed.

The project team also applied the IMPLAN model to generate estimates of the induced effects associated with the airline's operations. IMPLAN's input-output tables not only allow users to understand the "backward" relationships between end users and suppliers (e.g., travelers' purchasing meals at airports cause the restaurants to purchase inputs – e.g., groceries, utilities, etc.), but also "forwards" (e.g., wages paid to restaurant employees yields further spending, such as on autos, home repair, groceries, etc.). IMPLAN's estimates of earnings, value added, and economic output included in this report are expressed in 2019 dollars.

Estimating the Economic Impact of Visitor Spending

Broadly speaking, the economic impact of visitor spending is estimated by generating data on average spending by visitors arriving on Southwest at DEN. The total impact by visitor spending depends on the amount the visitors spend, the length of stay, and the different categories of spending – mostly in the hospitality sector: hotels, restaurants, retail, local transportation, and entertainment industries. Econometric models applied to data on visitor spending convert those data into estimated jobs.

The team analyzed data on visitor spending from Visit Denver and the Colorado Tourism Office. The latter conducted an overview of Colorado's travel and tourism market and provided a detailed profile of

the state’s visitors for each calendar year through Longwoods International. This information is based upon data on the day and overnight travel patterns of a representative sample of U.S. households, gathered through the syndicated TravelUSA® survey of the U.S. travel market. The Longwoods report that was referenced for this study was for 2019 visitors to Colorado. This report has information that informed spending by visitors who arrived in Colorado via air transport. The report describes spending based on differences among the three types of travelers that comes to Colorado.

1. Leisure travelers visiting friends and family – those coming to see or stay with friends or relatives in Colorado;
2. Marketable leisure visitors – those visiting Colorado who are not coming to see or stay with friends or relatives; and
3. Business travelers – those coming to Colorado for business purposes, including those attending a conference.

Table App-1: Summary of Traveler Types That Visited Colorado

Type of Traveler	% of All Overnight Travelers
Leisure travelers visiting friends and family	54%
Marketable leisure visitors	37%
Business travelers	10%

Total

Source: Longwoods International, Colorado Travel Year 2019, Final Report

These groups of travelers have different spending patterns and thus, slightly different impacts on the state’s economy. According to the report for the Colorado Tourism Office issued by Longwoods International, out of a total of 39 million visitors to Colorado in 2019, 14.2 million were for visiting friends and family.¹⁷ Those travelers spent 34% less per trip than marketable leisure travelers.¹⁸ However, the report does not distinguish between the average amounts spent by visitors who *drove to* Colorado versus those who *flew into* Colorado. In general, because visitors who arrive by air tend to spend more than those that arrive by ground, the project team made reasoned adjustments to those data to account for differences in average spending associated with travelers who arrive by air.

Econometric models applied to data on visitor spending convert those data into estimated employment and the other measures of economic impact. Finally, the project team makes certain technical adjustments to the output to eliminate double counting. The indirect impacts of commercial aviation

¹⁷ Longwoods International, Colorado Travel Year 2019, Final Report, p. 8. Report prepared on behalf of the Colorado Tourism Office.

¹⁸ Ibid, p. 19.

include some associated with the hospitality industry. Similarly, the indirect impacts of tourism accounts include commercial airlines. This overlap is eliminated when calculating the total economic impact. That is, the total economic impact is not the sum of the impacts associated with the airline's operations at an airport plus the sum of the visitor impacts; it is less than the sum of the two, because the overlap must be addressed.

Impact of Southwest's Operations and Visitor Spending on Government Tax Revenues

The project team applied the IMPLAN model to produce estimates of federal, state, and local tax revenues generated by the employment and economic activity involved in the airline's operations. The taxes are summarized into major groupings:

1. Social Insurance taxes – this includes both the amounts contributed by employees and employers to Social Security (the old age, survivors, disability, and hospital insurance and unemployment insurance program).
2. Federal income taxes – taxes paid to the federal government on personal income.
3. Other federal taxes – these include all federal excise and customs duties which could be levied on alcohol, tobacco, telephones or such items as rents and royalties, special assessments, fines, settlements, and donations.
4. State income taxes – taxes paid to the states on personal income.
5. Other state and local taxes these include estimated tax receipts paid by employees for such items as property taxes, retail sales taxes, gas taxes, motor vehicle licenses, gasoline, alcohol, tobacco, and other consumables.

False Precision

Using limited data to suggest precise totals is known as “false precision.” Throughout this analysis, the Project Team attempted to avoid misleading readers in giving the appearance of more accuracy than warranted by the data.

False precision carries with it an implication of high accuracy, which is not necessarily true. As conveyed in the text of the report, for example, “wages,” “earnings,” and “output” as well as multiplier impacts are based on state and regional averages by industry in Colorado. As averages, they do not necessarily convey the exact wages by employees or that are generated through multiplier effects, which for individual business establishments may be higher or lower than industry averages.

To avoid misleading readers, all final totals for on-airport impacts, air-reliant impacts, and visitor spending were rounded. By rounding to an appropriate unit, the study assures maximum reliability and avoids misleading readers by claiming false precision.



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