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## Catalyst!!

# The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy



### THE PERRYMAN GROUP

510 N. Valley Mills Dr., Suite 300

Waco, TX 76710

ph. 254.751.9595, fax 254.751.7855

*info@perrymangroup.com*

*www.perrymangroup.com*

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## Introduction

From the dawn of civilization, transportation has been the defining force in economic progress. The earliest settlements were concentrated along the great navigable waterways of the world, and trails and trade routes defined commerce for millennia. Over time, railroads, highways, and, more recently, airports have been added to the infrastructure complex of the world. As at the beginning, modern economies are defined by accessibility and logistics, and superior transportation offerings are a critical factor in defining the competitiveness and success of a region.

For more than 40 years, Dallas/Fort Worth International Airport (DFW Airport) has been a crucial source of economic growth and development. Serving one of the most dynamic regions of the economy, the Airport has provided air travel and cargo infrastructure essential to businesses and individuals in the region and beyond. It has been the catalyst for the emergence of the Metroplex area as a major urban center.

In addition, DFW Airport serves as a substantial source of business activity through operations of the Airport itself as well as related businesses such as concessions and retail establishments within the terminals. Several office and industrial parks

*DFW Airport serves as a substantial source of business activity for the North Central Texas Region and beyond.*

surrounding the terminal areas provide an ideal location for businesses dependent on proximity to air passenger and cargo service, further increasing the economic benefits. A significant amount of land is still available at DFW Airport; development of these parcels

would involve significant construction spending and an increase in jobs on an ongoing basis.

The Perryman Group (TPG) was recently asked to examine the current and potential future economic and fiscal impacts of DFW Airport and associated facilities. In addition, the likely effects on local taxing entities were estimated. This report presents the results of TPG's analysis.

## SUMMARY OF FINDINGS FROM THE PERRYMAN GROUP'S ANALYSIS:

**DFW Airport is a Cornerstone of Economic Development**

For more than 40 years, DFW Airport has been providing air passenger and cargo service to the vibrant economies of Dallas, Fort Worth, and the other cities in the North Central Texas Region. In addition to this essential role, the Airport is also an important source of jobs and economic activity for the area and beyond. The Perryman Group estimates that **current DFW Airport operations and related activities generate 228,000 jobs and \$37.0 billion in annual total expenditures in the North Central Texas Region** when multiplier effects are considered. Construction projects lead to billions of dollars in additional gains, and developing available land at DFW has the potential to further increase benefits.

## Summary of Economic and Fiscal Benefits of DFW Airport

	Total Expenditures	Employment	Tax Receipts	
			State	Local Entities
<b>Airport Operations</b> (Includes terminal operations, air carrier operations, concessions and rental cars operations.)	\$13.4 billion per year	76,145 permanent jobs	\$341.9 million per year	\$174.5 million per year
<b>DFW Tenants</b> (Includes air cargo operations and other tenants.)	\$20.8 billion per year	129,372 permanent jobs	\$575.3 million per year	\$294.9 million per year
<b>TOTAL Current Effects</b> (Includes airport operations and DFW tenants, as well as visitor spending.)	\$37.0 billion per year	228,000 permanent jobs	\$1.1 billion per year	\$533.8 million per year
<b>Construction Projects</b> (Includes TRIP, CIP, AIP, and tenant projects.)	\$13.4 billion	76,415 person-years	\$353.9 million	\$178.5 million
<b>Potential Land Development</b> (Ongoing effects at maturity when available acreage is developed in accordance with land use plans.)	\$27.4 billion per year	175,590 permanent jobs	\$908.4 million per year	\$428.2 million per year

\*The Perryman Group's US Multi-Regional Impact Assessment System was utilized to quantify the total economic benefits (including multiplier effects) of current and potential future operations associated with DFW Airport. For additional detail regarding effects on other measures of business activity and results by industrial sector, see the remainder of this report and the Appendices. Because jobs during the construction phase are transitory in nature, they are measured in "person-years;" ongoing operational jobs continue and are thus measured as "permanent jobs."

Source: The Perryman Group

## DFW Airport and the North Central Texas Regional Economy

As noted, DFW Airport is a cornerstone of the regional economy, providing air service for passengers and cargo to destinations around the world. Efficient air travel infrastructure is a crucial aspect of economic health and development, and DFW Airport has long met the needs of the surrounding region and beyond.

### DFW Airport

*More than 63.5 million passengers and 700,000 tons of cargo traveled through DFW Airport in 2014.*

DFW Airport is among the busiest in the world, ranking third in terms of operations and ninth in terms of passengers. DFW Airport covers nearly 27 square miles, with seven runways ranging from 8,500 to 13,400 feet long. About 27 passenger airlines operate out of DFW Airport, providing service to more than 200 destinations.

More than 63.5 million passengers traveled through DFW Airport in 2014, with 58% connecting and 42% local. In July 2015, passengers totaled almost 6.2 million passengers, 5.3 million of whom were domestic travelers. In 2014, total operations were 679,820, with total cargo of 700,186 US tons.<sup>1</sup>

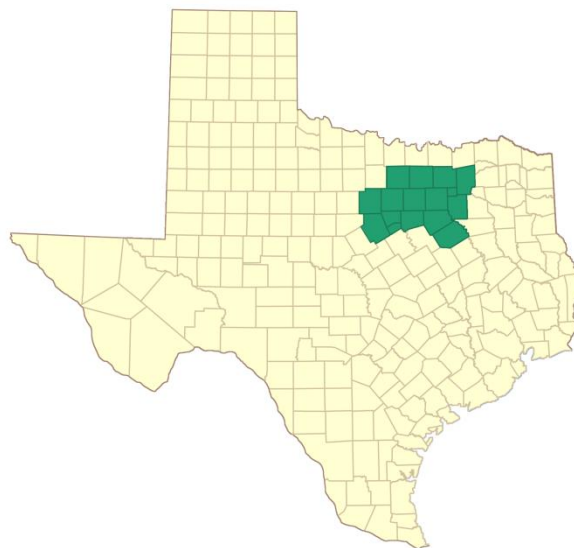
### Economic Forecast for the North Central Texas Region

The study area used in this report is the North Central Texas Council of Governments (COG) Region, which includes Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise Counties.

<sup>1</sup> All operations data obtained from Dallas/Fort Worth International Airport Website (dfwairport.com).

The economy of the area has long been among the most dynamic in the nation, with growth across a spectrum of industries. The presence of DFW Airport is, as noted, an important aspect of this strong performance.

The Perryman Group's latest long-term forecast for the North Central Texas Region calls for moderate growth. The population of the Region is projected to exceed 10.7 million in 2040, an increase of nearly 3.6 million. Real gross product (in constant 2009 dollars) is forecast to expand from an estimated 2015 level of \$466.2 billion to almost \$1.1 trillion by 2040, a 3.46% annual rate of growth. Wage and salary employment is projected to grow from an estimate of approximately 3.5 million in 2015 to 5.3 million in 2040, representing almost 1.9 million net new jobs over the period.



A summary of several key indicators is provided in the table below; the detailed projections are provided in the Appendix.

Outlook for the North Central Texas Region Economic Indicators 2015 - 2040				
Key Indicator	2015 Level	Projected 2040 Level	Projected Growth Rate*	Projected Increase
Real Gross Product*	\$466.165 billion	\$1.092 trillion	3.46%	\$626.029 billion
Population	7.143 million	10.717 million	1.64%	3.574 million
Wage & Salary Employment	3.461 million	5.324 million	1.74%	1.863 million
Real Personal Income*	\$330.803 billion	\$920.352 billion	4.18%	\$589.549 billion
Real Retail Sales*	\$119.474 billion	\$340.651 billion	4.28%	\$221.176 billion

\*Compound Annual Growth Rate, meaning that it reflects changes in the base from which growth is calculated. Real Gross Product and Real Retail Sales are computed in 2009 dollars. Real Personal Income by place of residence, in 2009 dollars. See the Appendices for further information.

## Measuring Economic Impacts

Any economic stimulus, whether positive or negative, generates multiplier effects throughout the economy. In this instance, DFW Airport and associated facilities are an important source of jobs; collateral development at the Airport contributes further gains. Operations of these entities generate economic activity across a spectrum of industries through operational spending. These effects ripple through the economy, leading to additional gains. Potential development of additional land at the Airport would lead to further increases in business activity, both during construction and once tenant firms are in operation.

DFW Airport provided information regarding current employment as well as current and potential future land use at the site. The Perryman Group translated this information into economic activity using typical locations in airport developments, conservative coverage ratios and construction cost estimates by property type, and expected levels of employment in various facilities (fully adjusted for typical vacancies and turnover). The associated multiplier effects were measured using The Perryman Group's input-output assessment model (the US Multi-Regional Impact Assessment System), which is described in further detail in the Appendices to this report. The system has been consistently maintained and updated since it was developed by the firm some 30 years ago, and has been used in hundreds of analyses for clients ranging from major corporations to government agencies. It uses a variety of data (from surveys, industry information, and other sources) to describe the various goods and services (known as resources or inputs) required to produce another good/service. This process allows for estimation of the total economic impact (including multiplier effects) of DFW Airport associated facilities. The models used in the current analysis reflect the specific industrial composition and characteristics of the North Central Texas Region. The model is also linked to a system for quantifying the tax effects associated with the gains business activity such as increases in retail sales taxes and property taxes.

These total economic effects are quantified for key measures of business activity:

- **Total expenditures** (or total spending) measure the dollars changing hands as a result of the economic stimulus.
- **Gross product** (or output) is production of goods and services that will come about in each area as a result of the activity. This measure is parallel to the gross domestic product numbers commonly reported by various media outlets and is a subset of total expenditures.
- **Personal income** is dollars that end up in the hands of people in the area; the vast majority of this aggregate derives from the earnings of employees, but payments such as interest and rents are also included.
- **Job gains** are expressed as person-year of employment for transitory construction effects and permanent jobs for ongoing operational effects. Note that person-years are spread over the construction period and may reflect varying numbers of workers actually on site. For instance, 3,000 person-years could be 1,000 people working for three years or 6,000 different people working for a half year each.

Results for jobs and gross product are reported in the body of this report, with other measures and industry-level detail in the Appendices. Monetary values were quantified on a constant (2015) dollar basis. See the Appendices to this report for additional information regarding the methods and assumptions used in this analysis.

## Current Economic Benefits of DFW Airport

DFW Airport operations lead to significant gains in economic activity across a spectrum of industries. In addition to providing thousands of jobs directly, the Airport supports thousands more through private businesses located at the Airport.

The Perryman Group estimated economic activity associated with

*DFW Airport is a substantial source of economic activity even within the context of the North Central Texas Region.*

- **activity within the terminals** including terminal operations, air carrier operations, and concessions and retail operations at the airport including rental cars;
- **tenants located within the airport property** including air cargo companies as well as hotels, the golf course, and others; and
- **spending by visitors** to the area arriving through DFW Airport.

In addition, The Perryman Group examined the **fiscal benefits** to the State of Texas as well as local taxing entities within the Region. Business operations generate taxes for local governmental entities including cities, counties, schools, and special district in

*The Perryman Group estimates that when multiplier effects are considered, the total current economic impact of **DFW Airport operations** includes **\$13.376 billion** in total expenditures and **\$6.559 billion** in gross product each year, as well as **76,145 jobs** in the Region.*

multiple ways. First, firms pay taxes directly. Second, taxes are generated through the economic activity associated with business operations. In addition, the spending of payroll funds by consumers provides revenues to various governmental entities.

For example, gains in retail sales associated with the operations of DFW Airport, related facilities, and collateral development were quantified as part of this study. A portion of these retail sales are taxable and lead to increased receipts to local taxing entities. In

addition, DFW Airport and associated facilities serve as a source of jobs, therefore increasing the demand for housing in the area and, hence, property tax values. Visitors who stay in local hotels generate occupancy tax revenue. When the total economic



effects are considered (such as described in the prior section), the gains in taxes from these indirect sources are significant.

## DFW Airport Operations

The Perryman Group estimates that when multiplier effects are considered, the economic benefits of DFW Airport terminal operations, air carriers, and concessions (including rental cars) total some **\$13.376 billion** in total expenditures and **\$6.559 billion** in output each year, as well as **76,145 jobs** in the North Central Texas Region. Of this amount,

- the total current economic impact of **terminal operations** includes \$2.363 billion in total expenditures and \$1.312 billion in gross product each year, as well as 14,883 jobs;
- **air carrier operations** generate economic benefits of some \$9.301 billion in total expenditures and \$4.421 billion in gross product each year, as well as 48,769 jobs; and
- **concessions** at the airport (including rental cars) lead to gains of \$1.711 billion in total expenditures and \$826.884 million in gross product each year, as well as 12,492 jobs.

This economic activity also generates incremental tax receipts to the State and local taxing entities in the Region of an estimated **\$341.861 million** and **\$174.462 million**, respectively. Additional details are included in the following table, with further information available in the Appendices.

The Current Annual Impact of DFW Airport and Associated Operations on Business Activity and Tax Receipts in the North Central Texas Region				
<b>ECONOMIC BENEFITS</b> (Monetary Values in Billions of Constant 2015 Dollars)				
	<b>Terminal Operations</b>	<b>Air Carrier Operations</b>	<b>Concessions Operations</b> <i>(including rental cars)</i>	<b>TOTAL</b>
Total Expenditures	\$2.363	\$9.301	\$1.711	<b>\$13.376</b>
Gross Product	\$1.312	\$4.421	\$0.827	<b>\$6.559</b>
Personal Income	\$0.880	\$2.785	\$0.513	<b>\$4.179</b>
Retail Sales	\$0.328	\$1.107	\$0.523	<b>\$1.958</b>
Employment (Permanent Jobs)	14,883	48,769	12,492	<b>76,145</b>
<b>FISCAL BENEFITS</b> (In Millions of constant 2015 Dollars)				
State	\$64.037	\$203.767	\$74.057	<b>\$341.861</b>
Local	\$33.484	\$108.343	\$32.635	<b>\$174.462</b>
*Columns may not sum to total due to rounding. SOURCE: The Perryman Group				

## Tenant Operations

Tenant businesses located on the land surrounding DFW Airport also provide a notable economic stimulus for the region. In addition to cargo and warehousing operations, a wide array of other tenants are located on the Airport property including a golf course, hotel, car dealership, retail businesses, manufacturing firms, and other types of businesses.

In 2014, DFW Airport handled over 700,180 tons of cargo, and **air cargo**-related businesses generate significant economic benefits. The Perryman Group estimates that the impact of cargo operations at DFW Airport includes some **\$17.811 billion** in total expenditures and **\$10.008 billion** in output each year, as well as **110,863** jobs (including all multiplier effects). **Other tenant operations** generate an additional **\$2.970 billion** in

total expenditures and **\$1.613 billion** in gross product per year; about **18,509** jobs (with multiplier effects) are also generated. The fiscal benefits of this economic activity include an estimated **\$575.306 million** to the State and **\$294.948 million** to local taxing entities within the North Central Texas Region each year.

The following table and Appendices to this report include additional details.

The Current Annual Impact of DFW Airport Tenants on Business Activity and Tax Receipts in the North Central Texas Region*			
<b>ECONOMIC BENEFITS</b> (Monetary Values in Billions of Constant 2015 Dollars)			
	<b>Air Cargo Operations</b>	<b>Other Tenant Operations*</b>	<b>TOTAL</b>
Total Expenditures	\$17.811	\$2.970	<b>\$20.781</b>
Gross Product	\$10.008	\$1.613	<b>\$11.621</b>
Personal Income	\$6.317	\$1.012	<b>\$7.329</b>
Retail Sales	\$2.526	\$0.542	<b>\$3.069</b>
Employment (Permanent Jobs)	110,863	18,509	<b>129,372</b>
<b>FISCAL BENEFITS</b> (In Millions of constant 2015 Dollars)			
State	\$472.749	\$102.557	\$575.306
Local	\$248.364	\$46.584	\$294.948
*Columns may not sum to total due to rounding. Cargo tenants are included under air cargo operations; other tenants are other types of businesses. SOURCE: The Perryman Group			

## Visitor Spending

Another source of significant economic impact associated with DFW Airport is visitor spending from passengers who are from out of the Dallas/Fort Worth area who travel to the area by way of the Airport. The Perryman Group estimates the current annual impact of spending by out-of-area passengers (with all multiplier effects) includes

**\$2.857 billion** in total expenditures and **\$1.589 billion** in gross product each year, as well as **22,483** jobs. Incremental tax receipts are also significant, as noted in the following table.

The Current Annual Impact of Visitor Spending Associated with Out-of-Area DFW Airport Passengers on Business Activity and Tax Receipts in the North Central Texas Region*	
<b>ECONOMIC BENEFITS</b> (Monetary Values in Billions of Constant 2015 Dollars)	
Total Expenditures	\$2.857
Gross Product	\$1.589
Personal Income	\$0.960
Retail Sales	\$1.010
Employment (Permanent Jobs)	22,483
<b>FISCAL BENEFITS</b> (In Millions of constant 2015 Dollars)	
State	\$159.991
Local	\$64.422
SOURCE: The Perryman Group	

## Total Current Ongoing Effects

Combining these sources of economic benefits (terminal and related operations, cargo-related and other tenants, and visitors) yields an estimate of the current ongoing impact of DFW Airport of an estimated **\$37.014 billion** in total expenditures and **\$19.770 billion** in output (gross product) each year, as well as **228,000** jobs.

The Total Current Annual Impact of DFW Airport Operations and Other Ongoing Effects* on Business Activity and Tax Receipts in the North Central Texas Region	
<b>ECONOMIC BENEFITS</b> (Monetary Values in Billions of Constant 2015 Dollars)	
Total Expenditures	\$37.014
Gross Product	\$19.770
Personal Income	\$12.468
Retail Sales	\$6.037
Employment (Permanent Jobs)	228,000
<b>FISCAL BENEFITS</b> (In Millions of constant 2015 Dollars)	
State	\$1,077.158
Local	\$533.832
*Includes terminal operations, air carrier operations, retail and concessions (including rental cars), cargo-related tenants, other tenants, and visitor spending. SOURCE: The Perryman Group	

## **Economic Benefits of Enhancements and Potential Expansion Projects**

A large investment in upgrades and improvements to terminals at DFW Airport is currently underway and is generating a notable economic stimulus. In addition, development of available parcels would generate substantial business activity during construction and once additional tenants begin operations. The Perryman Group measured the economic effects of these programs.

### **Current and Planned Enhancements**

Currently, a \$2.69 billion initiative to improve DFW Terminals A, B, C, and E is underway. The program (the Terminal Renewal and Improvement Program or TRIP) began in early 2011 and is scheduled for completion in December 2021. TRIP involves enhanced concessions, security, parking, and other improvements. The Perryman Group estimates that when multiplier effects are considered, the benefits of the TRIP program will include some **\$7.129 billion** in total spending, **\$3.411 billion** in output (gross product), and **40,742** person-years of employment during the course of the 2011-2021 construction phase.

The overall Capital Improvement Program (CIP) currently underway at the airport includes significant upgrades to concessions and other enhancements in addition to those included in the TRIP program. These initiatives are also responsible for substantial economic construction initiatives. The Perryman Group estimates that the CIP efforts (excluding TRIP) over the next 10 years will lead to gains in business activity of an estimated **\$3.897 billion** in total spending, **\$1.839 billion** in gross product, and **22,044** person-years of employment (including multiplier effects).

Other improvements are underway largely funding by grants through the Federal Aviation Administration's Airport Improvement Program (AIP). Projects include rehabilitation of a taxiway and purchase and installation of new equipment. These

enhancements lead to an estimated gain in business activity over a 10-year period of **\$0.825 billion** in total spending, **\$0.381 billion** in gross product, and **4,503** person-years of employment (including multiplier effects).

Beyond the extensive efforts by DFW Airport to upgrade and expand its facilities, **tenants** at the Airport have also engaged in recent improvement projects. Tenants have invested some \$469 million since 2011, including new DART lines and the Belt Line Station. When multiplier effects are considered, these tenant projects lead to incremental business activity in the North Central Texas Region of an estimated **\$1.540 billion** in total expenditures, **\$0.758 billion** in gross product, and **9,126** person-years of employment.

Impact of the Terminal Renewal and Improvement (TRIP) Program, Other Elements of the Capital Improvement Program (CIP), Projects Related to the Federal Airport Improvement Program (AIP) and Tenant Construction Projects at DFW Airport on Business Activity and Tax Receipts in the North Central Texas Region					
<b>ECONOMIC BENEFITS</b> (Monetary Values in Billions of Constant 2015 Dollars)					
	TRIP	CIP*	AIP	Tenant Construction Projects	TOTAL
Total Expenditures	\$7.129	\$3.898	\$0.825	\$1.540	<b>\$13.392</b>
Gross Product	\$3.411	\$1.839	\$0.381	\$0.758	<b>\$6.389</b>
Personal Income	\$2.315	\$1.244	\$0.258	\$0.518	<b>\$4.335</b>
Retail Sales	\$0.910	\$0.497	\$0.098	\$0.200	<b>\$1.705</b>
Employment (Person-Years of Employment)	40,742	22,044	4,503	9,126	<b>76,415</b>
<b>FISCAL BENEFITS</b> (In Millions of constant 2015 Dollars)					
State	\$188.741	\$103.376	\$20.526	\$41.215	<b>\$353.858</b>
Local	\$94.658	\$51.490	\$10.388	\$20.977	<b>\$177.513</b>
* CIP effects excluding TRIP. Columns may not sum to total due to rounding. SOURCE: The Perryman Group					

## Development of Available Acreage

About 4,000 acres of land at DFW Airport remains available for development. The Land Use Plan for the airport “identifies and illustrates strategies for developing aviation-related, industrial/warehouse and cargo/distribution facilities as well as mixed-use office, retail and hospitality spaces at the Airport.”<sup>2</sup> A report prepared in 2011 by Jones Lang LaSalle for DFW Airport provides further detail and was also utilized in this assessment.<sup>3</sup>

Developing these parcels would not only involve substantial capital investments during construction but also notable incremental employment on an ongoing basis.

The Perryman Group estimated the potential incremental economic activity based on current land-use plans and found that the additional business activity associated with development of these parcels includes **\$18.8 billion** in total expenditures, **\$9.1 billion** in gross product, and **107,931** person-years of employment during construction. Once tenants in the new facilities are fully operational (at maturity), the ongoing economic benefits include an estimated **\$27.4 billion** in total expenditures and **\$15.1 billion** in gross product each year as well as **175,590** permanent jobs. Fiscal benefits are also substantial, as noted in the table below.

*Developing available parcels at DFW Airport would not only involve substantial capital investments during construction, but also notable incremental employment on an ongoing basis.*

<sup>2</sup> Dallas/ Fort Worth International Airport Commercial Development Land Use Plan, <https://www.dfairport.com/landhere/useplan/index.php>

<sup>3</sup> “Dallas/Ft. Worth International Airport commercial development business modeling,” Jones Lang LaSalle, July 2011.



The Total Potential Impact of Development of Available Acreage at DFW Airport* on Business Activity and Tax Receipts in the North Central Texas Region		
<b>ECONOMIC BENEFITS</b> (Monetary Values in Billions of Constant 2015 Dollars)		
	<b>During Construction</b>	<b>Annually When Fully Operational</b>
Total Expenditures	\$18.753	\$27.351
Gross Product	\$9.025	\$15.110
Personal Income	\$6.129	\$1.219
Retail Sales	\$2.409	\$4.781
Employment	107,931 Person-Years	175,590 Permanent Jobs
<b>FISCAL BENEFITS</b> (In Millions of Constant 2015 Dollars)		
State	\$498.774	\$908.427
Local	\$250.505	\$428.163
*Construction based on current land-use plans, analysis by Jones Lang LaSalle, and typical development patterns. Operations estimates assume development as planned with employment allocations reflecting standard square-footage patterns; they are fully adjusted for normal vacancy and turnover. SOURCE: The Perryman Group		

## Conclusion

DFW Airport is a cornerstone of economic development for the North Central Texas Region and beyond. In addition to the millions of passengers served every year, the Airport is critical to cargo-related businesses and many other types of firms.

The Airport's operations are also a source of economic stimulus through terminal operations as well as air carriers, concessions and retail establishments, and other firms located within the Airport itself. Further

*The total current annual impact of DFW Airport terminal operations, air carrier operations, retail and concessions (including rental cars), cargo-related tenants, other tenants, and visitor spending include approximately **\$37.0 billion** in total expenditures and **\$19.8 billion** in output (gross product) per year as well as **228,000** permanent jobs (including multiplier effects).*

gains in business activity stem from the multi-use development of parcels of land within the Airport.

*The Perryman Group estimates that when multiplier effects are considered, current operations of DFW Airport generate gains in business activity in the North Central Texas Region of about **\$13.4 billion** in total expenditures and **\$6.6 billion** in output (gross product) each year as well as **76,145** permanent jobs.*

The Perryman Group estimates that when multiplier effects are considered, current operations of DFW Airport generate gains in business activity in the North Central Texas Region of \$13.376 billion in total expenditures and \$6.559 billion in output (gross product) each year as well as 76,145 permanent jobs. When other aspects of DFW operations are considered (such as air carrier operations, retail and concessions (including rental cars), cargo-

related tenants, other tenants, and visitor spending), the total current annual impact rises to **\$37.014 billion** in total expenditures and **\$19.770 billion** in output (gross product) per year as well as **228,000** permanent jobs (including multiplier effects).

Large ongoing and potential future construction investments yield sizable, though transitory gains, and visitor spending by out-of-area travelers results in additional business activity. This economic activity, in turn, leads to substantial incremental tax receipts.

## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

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*DFW Airport has been and will continue to be an essential source of economic and fiscal benefits.*

As great as these numbers are, however, they do not tell the whole story. Many firms locate and expand throughout the region because of the domestic and global accessibility provided by DFW Airport; convention, sports, and entertainment venues are dependent on superior aviation infrastructure; and communities throughout the area routinely tout the facility as a primary asset in economic development efforts.

DFW Airport has been and will continue to be an essential source of economic and fiscal benefits to the North Central Texas Region and beyond as well as the catalyst for future prosperity.

## APPENDICES

## Appendix A: About The Perryman Group

The Perryman Group (TPG) is an economic research and analysis firm based in Waco, Texas. The firm has more than 30 years of experience in assessing the economic impact of corporate expansions, regulatory changes, real estate developments, public policy initiatives, and myriad other factors affecting business activity. TPG has conducted hundreds of impact analyses for local areas, regions, and states throughout the United States. Impact studies have been performed for hundreds of clients including many of the largest corporations in the world, governmental entities at all levels, educational institutions, major health care systems, utilities, and economic development organizations.

Dr. M. Ray Perryman, founder and President of the firm, developed the US Multi-Regional Impact Assessment System (USMRIAS—used in this study) in the early 1980s and has consistently maintained, expanded, and updated it since that time. The model has been used in hundreds of diverse applications and has an excellent reputation for reliability.

The Perryman Group has analyzed the economic and fiscal aspects of a broad range of corporate locations, infrastructure projects, mixed-use real estate developments, and regulatory changes. The firm has completed hundreds of economic impact and market studies for corporations and communities throughout the United States, and is, thus, particularly well equipped for a study of the gains in business activity stemming from the DFW Airport and surrounding development.

The firm has analyzed major transportation infrastructure including toll roads, port facilities, and airports. Projects include Fort Worth Alliance Airport and recent expansions of the Port of Houston and the Port of Charleston. Major mixed-use real estate developments have also been analyzed on a number of occasions, including the new ExxonMobil facility in the Houston area and the surrounding properties. The Perryman Group has also been preparing regular forecasts and other detailed assessments of economic conditions for the North Central Texas Region as well as the metropolitan statistical areas located therein.

## Appendix B: Methods Used

### US Multi-Regional Impact Assessment System (USMRIAS)

The basic modeling technique employed in this study is known as dynamic input-output analysis. This methodology essentially uses extensive survey data, industry information, and a variety of corroborative source materials to create a matrix describing the various goods and services (known as resources or inputs) required to produce one unit (a dollar's worth) of output for a given sector. Once the base information is compiled, it can be mathematically simulated to generate evaluations of the magnitude of successive rounds of activity involved in the overall production process.

There are two essential steps in conducting an input-output analysis once the system is operational. The first major endeavor is to accurately define the levels of direct activity to be evaluated. In this instance, DFW Airport provided current employment and anticipated land-use information as well as maps of land available for future development, as well information on air cargo volumes, visitors, and other inputs. TPG also conducted independent research regarding visitor spending patterns and other elements of the analysis. Additionally, a prior study by Jones Lang LaSalle was utilized in the process of developing a reasonable scenario for future development.<sup>4</sup> The Perryman Group made use of this information as well as patterns observed in other, similar projects regarding typical coverage ratios and square footage per employee to translate acreage available into an estimate of potential future employment. Standard construction cost measures were also utilized. Adjustments were made to account for typical vacancies and turnover. Other specific assumptions are included within the body of this report and the footnotes to the tables.

In addition, a real estate absorption analysis was performed based on the baseline economic forecast for the North Central Texas Region derived from the Texas Econometric Model and utilizing the US Multi-Regional Real Estate Absorption System to project future demand by property type. This analysis indicated that the area could easily accommodate the additional development at DFW Airport, and the findings were not sensitive to shifts in the ultimate mix of users.

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<sup>4</sup> "Dallas/Ft. Worth International Airport commercial development business modeling," Jones Lang LaSalle, July 2011.

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The second major phase of the analysis is the simulation of the input-output system to measure overall economic effects of the projects facilitated by the sales tax for economic development. The present study was conducted within the context of the USMRIAS which was developed and is maintained by The Perryman Group. This model has been used in hundreds of diverse applications across the country and has an excellent reputation for accuracy and credibility. The systems used in the current simulations reflect the unique industrial structures and characteristics of the North Central Texas Region (Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise Counties). A tourism module within the model was utilized to analyze visitor spending.

The USMRIAS is somewhat similar in format to the Input-Output Model of the United States and the Regional Input-Output Modeling System, both of which are maintained by the US Department of Commerce. The model developed by TPG, however, incorporates several important enhancements and refinements. Specifically, the expanded system includes (1) comprehensive 500-sector coverage for any county, multi-county, or urban region; (2) calculation of both total expenditures and value-added by industry and region; (3) direct estimation of expenditures for multiple basic input choices (expenditures, output, income, or employment); (4) extensive parameter localization; (5) price adjustments for real and nominal assessments by sectors and areas; (6) measurement of the induced impacts associated with payrolls and consumer spending; (7) embedded modules to estimate multi-sectoral direct spending effects; (8) estimation of retail spending activity by consumers; and (9) comprehensive linkage and integration capabilities with a wide variety of econometric, real estate, occupational, and fiscal impact models. Moreover, the model uses specific local taxing patterns to estimate the fiscal effects of activity on a detailed sectoral basis. The models used for the present investigation have been thoroughly tested for reasonableness and historical reliability.

The impact assessment (input-output) process essentially estimates the amounts of all types of goods and services required to produce one unit (a dollar's worth) of a specific type of output. For purposes of illustrating the nature of the system, it is useful to think of inputs and outputs in dollar (rather than physical) terms. As an example, the construction of a new building will require specific dollar amounts of lumber, glass, concrete, hand tools, architectural services, interior design services, paint, plumbing, and numerous other elements. Each of these suppliers must, in turn, purchase additional dollar amounts of inputs. This process continues through multiple rounds of production, thus generating subsequent increments to business activity.

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The initial process of building the facility is known as the *direct effect*. The ensuing transactions in the output chain constitute the *indirect effect*.

Another pattern that arises in response to any direct economic activity comes from the payroll dollars received by employees at each stage of the production cycle. As workers are compensated, they use some of their income for taxes, savings, and purchases from external markets. A substantial portion, however, is spent locally on food, clothing, health care services, utilities, housing, recreation, and other items. Typical purchasing patterns in the relevant areas are obtained from the *ACCRA Cost of Living Index*, a privately compiled inter-regional measure which has been widely used for several decades, and the *Consumer Expenditure Survey* of the US Department of Labor. These initial outlays by area residents generate further secondary activity as local providers acquire inputs to meet this consumer demand. These consumer spending impacts are known as the *induced effect*. The USMRIAS is designed to provide realistic, yet conservative, estimates of these phenomena.

Sources for information used in this process include the Bureau of the Census, the Bureau of Labor Statistics, the Regional Economic Information System of the US Department of Commerce, and other public and private sources. The pricing data are compiled from the US Department of Labor and the US Department of Commerce. The verification and testing procedures make use of extensive public and private sources.

Impacts were measured in constant 2015 dollars to eliminate the effects of inflation. Note that totals may not add due to rounding.

The USMRIAS generates estimates of the effect on several measures of business activity. The most comprehensive measure of economic activity used in this study is **Total Expenditures**. This measure incorporates every dollar that changes hands in any transaction. For example, suppose a farmer sells wheat to a miller for \$0.50; the miller then sells flour to a baker for \$0.75; the baker, in turn, sells bread to a customer for \$1.25. The Total Expenditures recorded in this instance would be \$2.50, that is, \$0.50 + \$0.75 + \$1.25. This measure is quite broad, but is useful in that (1) it reflects the overall interplay of all industries in the economy, and (2) some key fiscal variables such as sales taxes are linked to aggregate spending.

A second measure of business activity frequently employed in this analysis is that of **Gross Product**. This indicator represents the regional equivalent of Gross Domestic Product, the most commonly reported statistic regarding national economic performance. In other words, the Gross Product of Texas is the amount of US output that is produced in that state; it is defined as



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the value of all final goods produced in a given region for a specific period of time. Stated differently, it captures the amount of value-added (gross area product) over intermediate goods and services at each stage of the production process, that is, it eliminates the double counting in the Total Expenditures concept. Using the example above, the Gross Product is \$1.25 (the value of the bread) rather than \$2.50. Alternatively, it may be viewed as the sum of the value-added by the farmer, \$0.50; the miller, \$0.25 (\$0.75 - \$0.50); and the baker, \$0.50 (\$1.25 - \$0.75). The total value-added is, therefore, \$1.25, which is equivalent to the final value of the bread. In many industries, the primary component of value-added is the wage and salary payments to employees.

The third gauge of economic activity used in this evaluation is **Personal Income**. As the name implies, Personal Income is simply the income received by individuals, whether in the form of wages, salaries, interest, dividends, proprietors' profits, or other sources. It may thus be viewed as the segment of overall impacts which flows directly to the citizenry.

The fourth measure, **Retail Sales**, represents the component of Total Expenditures which occurs in retail outlets (general merchandise stores, automobile dealers and service stations, building materials stores, food stores, drugstores, restaurants, and so forth). Retail Sales is a commonly used measure of consumer activity.

The final aggregates used are **Permanent Jobs and Person-Years of Employment**. The Person-Years of Employment measure reveals the full-time equivalent jobs generated by an activity. It should be noted that, unlike the dollar values described above, Permanent Jobs is a "stock" rather than a "flow." In other words, if an area produces \$1 million in output in 2014 and \$1 million in 2015, it is appropriate to say that \$2 million was achieved in the 2014-2015 period. If the same area has 100 people working in 2014 and 100 in 2015, it only has 100 Permanent Jobs. When a flow of jobs is measured, such as in a construction project or a cumulative assessment over multiple years, it is appropriate to measure employment in Person-Years (a person working for a year). This concept is distinct from Permanent Jobs, which anticipates that the relevant positions will be maintained on a continuing basis.

The USMRIAS is also linked to a fiscal model, which links the tax payments by industry to the specific rates and structures associated with the relevant State and local governmental authorities.

## Texas Econometric Model

### Overview

The Texas Econometric Model was developed by Dr. M. Ray Perryman, President and CEO of The Perryman Group (TPG), more than 30 years ago and has been consistently maintained, expanded, and updated since that time. It is formulated in an internally consistent manner and is designed to permit the integration of relevant global, national, state, and local factors into the projection process. It is the result of more than three decades of continuing research in econometrics, economic theory, statistical methods, and key policy issues and behavioral patterns, as well as intensive, ongoing study of all aspects of the global, US, Texas, and Texas metropolitan area economies. It is extensively used by scores of federal and State governmental entities on an ongoing basis, as well as hundreds of major corporations. It is employed on the current analysis to project future economic and demographic patterns in the North Central Texas Region.

This section describes the forecasting process in a comprehensive manner, focusing on both the modeling and the supplemental analysis. The overall methodology, while certainly not ensuring perfect foresight, permits an enormous body of relevant information to impact the economic outlook in a systematic manner.

### Model Logic and Structure

The Texas Econometric Model revolves around a core system which projects output (real and nominal), income (real and nominal), and employment by industry in a simultaneous manner. For purposes of illustration, it is useful to initially consider the employment functions. Essentially, employment within the system is a derived demand relationship obtained from a neo-Classical production function. The expressions are augmented to include dynamic temporal adjustments to changes in relative factor input costs, output and (implicitly) productivity, and technological progress over time. Thus, the typical equation includes output, the relative real cost of labor and capital, dynamic lag structures, and a technological adjustment parameter. The functional form is logarithmic, thus preserving the theoretical consistency with the neo-Classical formulation.

The income segment of the model is divided into wage and non-wage components. The wage equations, like their employment counterparts, are individually estimated at the 3-digit North American Industry Classification System (NAICS) level of aggregation. Hence, income by place of work is measured for approximately 90 production categories. The wage equations measure

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real compensation, with the form of the variable structure differing between “basic” and “non-basic.”

The basic industries, comprised primarily of the various components of Mining, Agriculture, and Manufacturing, are export-oriented, i.e., they bring external dollars into the area and form the core of the economy. The production of these sectors typically flows into national and international markets; hence, the labor markets are influenced by conditions in areas beyond the borders of the particular region. Thus, real (inflation-adjusted) wages in the basic industry are expressed as a function of the corresponding national rates, as well as measures of local labor market conditions (the reciprocal of the unemployment rate), dynamic adjustment parameters, and ongoing trends.

The “non-basic” sectors are somewhat different in nature, as the strength of their labor markets is linked to the health of the local export sectors. Consequently, wages in these industries are related to those in the basic segment of the economy. The relationship also includes the local labor market measures contained in the basic wage equations.

Note that compensation rates in the export or “basic” sectors provide a key element of the interaction of the regional economies with national and international market phenomena, while the “non-basic” or local industries are strongly impacted by area production levels. Given the wage and employment equations, multiplicative identities in each industry provide expressions for total compensation; these totals may then be aggregated to determine aggregate wage and salary income. Simple linkage equations are then estimated for the calculation of personal income by place of work.

The non-labor aspects of personal income are modeled at the regional level using straightforward empirical expressions relating to national performance, dynamic responses, and evolving temporal patterns. In some instances (such as dividends, rents, and others) national variables (for example, interest rates) directly enter the forecasting system. These factors have numerous other implicit linkages into the system resulting from their simultaneous interaction with other phenomena in national and international markets which are explicitly included in various expressions.

The output or gross area product expressions are also developed at the 3-digit NAICS level. Regional output for basic industries is linked to national performance in the relevant industries, local and national production in key related sectors, relative area and national labor costs in the

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industry, dynamic adjustment parameters, and ongoing changes in industrial interrelationships (driven by technological changes in production processes).

Output in the non-basic sectors is modeled as a function of basic production levels, output in related local support industries (if applicable), dynamic temporal adjustments, and ongoing patterns. The inter-industry linkages are obtained from the input-output (impact assessment) system which is part of the overall integrated modeling structure maintained by The Perryman Group. Note that the dominant component of the econometric system involves the simultaneous estimation and projection of output (real and nominal), income (real and nominal), and employment at a disaggregated industrial level. This process, of necessity, also produces projections of regional price deflators by industry. These values are affected by both national pricing patterns and local cost variations and permit changes in prices to impact other aspects of economic behavior. Income is converted from real to nominal terms using Texas Consumer Price Index, which fluctuates in response to national pricing patterns and unique local phenomena.

Several other components of the model are critical to the forecasting process. The demographic module includes (1) a linkage equation between wage and salary (establishment) employment and household employment, (2) a labor force participation rate function, and (3) a complete population system with endogenous migration. Given household employment, labor force participation (which is a function of economic conditions and evolving patterns of worker preferences), and the working age population, the unemployment rate and level become identities.

The population system uses Census information, fertility rates, and life tables to determine the “natural” changes in population by age group. Migration, the most difficult segment of population dynamics to track, is estimated in relation to relative regional and extra-regional economic conditions over time. Because evolving economic conditions determine migration in the system, population changes are allowed to interact simultaneously with overall economic conditions. Through this process, migration is treated as endogenous to the system, thus allowing population to vary in accordance with relative business performance (particularly employment).

Real retail sales is related to income, interest rates, dynamic adjustments, and patterns in consumer behavior on a store group basis. It is expressed on an inflation-adjusted basis. Inflation at the state level relates to national patterns, indicators of relative economic conditions, and ongoing trends. As noted earlier, prices are endogenous to the system.

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A final significant segment of the forecasting system relates to real estate absorption and activity. The short-term demand for various types of property is determined by underlying economic and demographic factors, with short-term adjustments to reflect the current status of the pertinent building cycle. In some instances, this portion of the forecast requires integration with the Multi-Regional Industry-Occupation System which is maintained by The Perryman Group. This system also allows any employment simulation or forecast from the econometric model to be translated into a highly detailed occupational profile.

The overall Texas Econometric Model contains numerous additional specifications, and individual expressions are modified to reflect alternative lag structures, empirical properties of the estimates, simulation requirements, and similar phenomena. Moreover, it is updated on an ongoing basis as new data releases become available. Nonetheless, the above synopsis offers a basic understanding of the overall structure and underlying logic of the system.

#### **Model Simulation and Multi-Regional Structure**

The initial phase of the simulation process is the execution of a standard non-linear algorithm for the state system and that of each of the individual sub-areas. The external assumptions are derived from scenarios developed through national and international models and extensive analysis by The Perryman Group. The US model, which follows the basic structure outlined above, was used to some extent in the current analysis to define the demand for domestically produced goods on a per capita basis.

Once the initial simulations are completed, they are merged into a single system with additive constraints and interregional flows. Using information on minimum regional requirements, import needs, export potential, and locations, it becomes possible to balance the various forecasts into a mathematically consistent set of results. This process is, in effect, a disciplining exercise with regard to the individual regional (including metropolitan and rural) systems. By compelling equilibrium across all regions and sectors, the algorithm ensures that the patterns in state activity are reasonable in light of smaller area dynamics and, conversely, that the regional outlooks are within plausible performance levels for the state as a whole.

The iterative simulation process has the additional property of imposing a global convergence criterion across the entire multi-regional system, with balance being achieved simultaneously on both a sectoral and a geographic basis. This approach is particularly critical on non-linear dynamic systems, as independent simulations of individual systems often yield unstable, non-convergent outcomes.

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It should be noted that the underlying data for the modeling and simulation process are frequently updated and revised by the various public and private entities compiling them. Whenever those modifications to the database occur, they bring corresponding changes to the structural parameter estimates of the various systems and the solutions to the simulation and forecasting system. The multi-regional version of the Texas Econometric Model is re-estimated and simulated with each such data release, thus providing a constantly evolving and current assessment of state and local business activity.

#### The Final Forecast

The process described above is followed to produce an initial set of projections. Through the comprehensive multi-regional modeling and simulation process, a systematic analysis is generated which accounts for both historical patterns in economic performance and inter-relationships and best available information on the future course of pertinent external factors. While the best available techniques and data are employed in this effort, they are not capable of directly capturing “street sense,” i.e., the contemporaneous and often non-quantifiable information that can materially affect economic outcomes. In order to provide a comprehensive approach to the prediction of business conditions, it is necessary to compile and assimilate extensive material regarding current events and factors both across the state of Texas and elsewhere.

This critical aspect of the forecasting methodology includes activities such as (1) daily review of hundreds of financial and business publications and electronic information sites; (2) review of major newspapers and online news sources in the state on a daily basis; (3) dozens of hours of direct telephone interviews with key business and political leaders in all parts of the state; (4) face-to-face discussions with representatives of major industry groups; and (5) frequent site visits to the various regions of the state. The insights arising from this “fact finding” are analyzed and evaluated for their effects on the likely course of the future activity.

Another vital information resource stems from the firm’s ongoing interaction with key players in the international, domestic, and state economic scenes. Such activities include visiting with corporate groups on a regular basis and being regularly involved in the policy process at all levels. The firm is also an active participant in many major corporate relocations, economic development initiatives, and regulatory proceedings.

Once organized, this information is carefully assessed and, when appropriate, independently verified. The impact on specific communities and sectors that is distinct from what is captured

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by the econometric system is then factored into the forecast analysis. For example, the opening or closing of a major facility, particularly in a relatively small area, can cause a sudden change in business performance that will not be accounted for by either a modeling system based on historical relationships or expected (primarily national and international) factors.

The final step in the forecasting process is the integration of this material into the results in a logical and mathematically consistent manner. In some instances, this task is accomplished through “constant adjustment factors” which augment relevant equations. In other cases, anticipated changes in industrial structure or regulatory parameters are initially simulated within the context of the Multi-Regional Impact Assessment System to estimate their ultimate effects by sector. Those findings are then factored into the simulation as constant adjustments on a distributed temporal basis. Once this scenario is formulated, the extended system is again balanced across regions and sectors through an iterative simulation algorithm analogous to that described in the preceding section.

## US Multi-Regional Real Estate Absorption System

The US Multi-Regional Real Estate Absorption System is a model developed by The Perryman Group which allows such applications as (1) historical characterization of real estate absorption by category (office, industrial, retail, distribution, housing, etc.); (2) projections of future absorption; (3) measurement of the impact of specific economic activity; and (4) analysis of the potential development within the context of the overall need for space.

The system is based on the simple notion that economic activity ultimately determines the need for space. Industrial space is needed when production increases; retail space is needed when purchasing expands; office space demands depend on the number of office workers, and housing is required when population expands. Although real estate is subject to cycles, long-term patterns are highly correlated with business activity.

The first step in the process is to obtain the requisite information on employment by industry. This information may be derived from historical data, forecasts, or an impact assessment. In the present instance, it is based on a long-term baseline simulation of the North Central Texas Region submodel of the Texas Econometric Model. This information is then simulated for the relevant area to obtain employment by occupation using the relevant submodel of the US Multi-Regional Industry-Occupation System. The results are then linked to estimates of the square footage requirements for various types of occupations and activities obtained from the National Association of Industry and Office Parks and other primary sources. These estimates are frequently updated to reflect changing patterns in space utilization.

Although not required for the current project, the system also has the capacity to link employment and projected population growth to new housing requirements based on local patterns, as well as allocations to single and multi-family categories.



## **Appendix C: Detailed Sectoral Results**

## Current Economic Benefits of DFW Airport

### The Current Annual Impact of Terminal Operations Associated with Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Permanent Jobs)</i>
Agriculture	\$15,553,070	\$4,217,838	\$2,834,727	46
Mining	\$21,272,731	\$4,848,270	\$2,552,218	15
Construction	\$37,812,736	\$19,969,919	\$16,456,458	237
Nondurable Manufacturing	\$192,000,187	\$59,476,459	\$31,722,580	579
Durable Manufacturing	\$58,398,808	\$23,885,016	\$15,207,400	211
Transportation and Utilities	\$414,801,020	\$263,711,940	\$170,620,057	2,322
Information	\$56,427,045	\$34,699,871	\$14,978,098	146
Wholesale Trade	\$82,589,982	\$55,880,238	\$32,221,043	376
Retail Trade	\$328,149,639	\$244,845,465	\$142,113,804	4,519
Finance, Insurance, and Real Estate	\$347,625,028	\$90,004,317	\$35,742,951	387
Business Services	\$598,254,878	\$389,624,073	\$317,833,407	3,978
Health Services	\$69,199,340	\$48,509,788	\$41,015,472	697
Other Services	\$141,294,342	\$71,851,488	\$57,187,617	1,370
<b>TOTAL</b>	<b>\$2,363,378,807</b>	<b>\$1,311,524,681</b>	<b>\$880,485,833</b>	<b>14,883</b>
Source: US Multi-Regional Impact Assessment System, The Perryman Group				

### The Current Annual Impact of Air Carrier Operations Associated with Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Permanent Jobs)</i>
Agriculture	\$52,937,671	\$14,176,964	\$9,506,518	155
Mining	\$163,298,649	\$36,357,511	\$17,760,669	98
Construction	\$130,945,492	\$69,104,781	\$56,946,646	823
Nondurable Manufacturing	\$809,368,270	\$216,170,821	\$115,102,632	2,027
Durable Manufacturing	\$246,780,472	\$109,385,940	\$70,646,496	955
Transportation and Utilities	\$4,163,823,791	\$1,967,225,957	\$1,288,729,783	17,838
Information	\$197,777,534	\$121,487,680	\$52,313,179	502
Wholesale Trade	\$298,194,213	\$201,991,116	\$116,469,877	1,361
Retail Trade	\$1,106,538,654	\$815,185,646	\$471,205,881	15,298
Finance, Insurance, and Real Estate	\$1,119,898,616	\$290,125,330	\$113,029,921	1,209
Business Services	\$362,003,328	\$203,360,156	\$165,889,778	2,076
Health Services	\$222,621,156	\$155,970,987	\$131,874,915	2,241
Other Services	\$427,273,779	\$220,214,440	\$175,660,414	4,188
<b>TOTAL</b>	<b>\$9,301,461,625</b>	<b>\$4,420,757,330</b>	<b>\$2,785,136,708</b>	<b>48,769</b>
Source: US Multi-Regional Impact Assessment System, The Perryman Group				

## The Current Annual Impact of Onsite Concession Operations (including Rental Cars) Associated with Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Permanent Jobs)</i>
Agriculture	\$17,811,039	\$4,415,931	\$2,933,901	48
Mining	\$16,840,984	\$3,824,632	\$1,979,375	11
Construction	\$25,160,391	\$13,381,735	\$11,027,384	159
Nondurable Manufacturing	\$167,049,479	\$50,200,328	\$26,616,551	476
Durable Manufacturing	\$45,008,769	\$18,335,632	\$11,836,202	171
Transportation and Utilities	\$95,295,005	\$43,506,114	\$26,413,726	327
Information	\$37,269,453	\$22,865,461	\$9,882,647	96
Wholesale Trade	\$68,150,976	\$46,110,278	\$26,587,598	311
Retail Trade	\$523,472,179	\$368,175,082	\$209,738,906	7,309
Finance, Insurance, and Real Estate	\$225,959,758	\$61,276,491	\$23,724,727	258
Business Services	\$77,310,747	\$45,546,682	\$37,154,418	465
Health Services	\$41,292,284	\$28,939,637	\$24,468,731	416
Other Services	\$370,671,794	\$120,306,221	\$100,844,518	2,447
<b>TOTAL</b>	<b>\$1,711,292,858</b>	<b>\$826,884,224</b>	<b>\$513,208,684</b>	<b>12,492</b>

Source: US Multi-Regional Impact Assessment System, The Perryman Group

## The Total Current Annual Impact of Terminal Operations, Air Carrier Operations, and Onsite Concession Operations (including Rental Cars) Associated with Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Permanent Jobs)</i>
Agriculture	\$86,301,780	\$22,810,733	\$15,275,146	249
Mining	\$201,412,364	\$45,030,413	\$22,292,263	124
Construction	\$193,918,619	\$102,456,436	\$84,430,488	1,220
Nondurable Manufacturing	\$1,168,417,936	\$325,847,608	\$173,441,763	3,082
Durable Manufacturing	\$350,188,049	\$151,606,588	\$97,690,098	1,337
Transportation and Utilities	\$4,673,919,816	\$2,274,444,011	\$1,485,763,566	20,486
Information	\$291,474,032	\$179,053,012	\$77,173,923	744
Wholesale Trade	\$448,935,170	\$303,981,632	\$175,278,518	2,047
Retail Trade	\$1,958,160,472	\$1,428,206,193	\$823,058,591	27,126
Finance, Insurance, and Real Estate	\$1,693,483,402	\$441,406,139	\$172,497,599	1,853
Business Services	\$1,037,568,953	\$638,530,911	\$520,877,603	6,519
Health Services	\$333,112,780	\$233,420,411	\$197,359,118	3,353
Other Services	\$939,239,916	\$412,372,149	\$333,692,549	8,005
<b>TOTAL</b>	<b>\$13,376,133,290</b>	<b>\$6,559,166,235</b>	<b>\$4,178,831,225</b>	<b>76,145</b>

Source: US Multi-Regional Impact Assessment System, The Perryman Group

### The Current Annual Impact of Air Cargo Operations Associated with Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Permanent Jobs)</i>
Agriculture	\$116,318,384	\$31,347,965	\$21,063,674	343
Mining	\$147,780,744	\$33,221,412	\$17,357,619	101
Construction	\$262,325,498	\$138,865,590	\$114,433,895	1,653
Nondurable Manufacturing	\$1,375,004,234	\$454,938,128	\$248,052,650	4,515
Durable Manufacturing	\$390,845,440	\$154,547,798	\$99,929,268	1,489
Transportation and Utilities	\$6,889,983,236	\$4,513,166,036	\$2,959,701,643	41,025
Information	\$546,970,550	\$335,334,775	\$144,200,373	1,376
Wholesale Trade	\$546,627,692	\$369,654,627	\$213,146,150	2,490
Retail Trade	\$2,526,447,722	\$1,871,971,250	\$1,084,337,649	34,835
Finance, Insurance, and Real Estate	\$2,752,647,491	\$775,953,051	\$328,347,794	3,565
Business Services	\$785,500,106	\$483,465,572	\$394,384,023	4,935
Health Services	\$503,742,730	\$353,067,240	\$298,521,621	5,072
Other Services	\$966,670,584	\$492,966,350	\$393,588,899	9,463
<b>TOTAL</b>	<b>\$17,810,864,411</b>	<b>\$10,008,499,794</b>	<b>\$6,317,065,258</b>	<b>110,863</b>
Source: US Multi-Regional Impact Assessment System, The Perryman Group				

### The Current Annual Impact of Other Tenant Operations Associated with Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Permanent Jobs)</i>
Agriculture	\$18,641,251	\$5,047,253	\$3,388,129	55
Mining	\$25,290,015	\$5,760,102	\$3,037,221	17
Construction	\$45,416,656	\$24,108,374	\$19,866,798	287
Nondurable Manufacturing	\$231,266,084	\$72,022,275	\$38,365,446	702
Durable Manufacturing	\$533,667,857	\$267,604,006	\$173,874,062	2,130
Transportation and Utilities	\$620,932,782	\$388,356,860	\$252,374,952	3,456
Information	\$64,922,431	\$39,811,950	\$17,344,220	176
Wholesale Trade	\$105,334,090	\$71,338,377	\$41,134,343	481
Retail Trade	\$542,396,166	\$414,214,916	\$242,089,334	7,429
Finance, Insurance, and Real Estate	\$400,651,175	\$103,735,301	\$41,693,530	449
Business Services	\$107,382,219	\$67,015,673	\$54,667,617	684
Health Services	\$80,406,902	\$56,353,682	\$47,647,560	809
Other Services	\$193,907,383	\$97,703,545	\$76,035,875	1,834
<b>TOTAL</b>	<b>\$2,970,215,012</b>	<b>\$1,613,072,312</b>	<b>\$1,011,519,085</b>	<b>18,509</b>
Source: US Multi-Regional Impact Assessment System, The Perryman Group				



## The Current Annual Impact of Visitor Spending Associated with Out-of-Area Passengers at Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Permanent Jobs)</i>
Agriculture	\$29,185,526	\$7,468,562	\$4,974,427	81
Mining	\$25,811,769	\$5,902,811	\$3,130,287	18
Construction	\$49,267,150	\$26,247,499	\$21,629,574	313
Nondurable Manufacturing	\$276,403,737	\$85,755,425	\$45,623,725	822
Durable Manufacturing	\$64,471,818	\$25,450,442	\$16,268,982	241
Transportation and Utilities	\$331,660,212	\$197,406,185	\$126,176,263	1,688
Information	\$73,760,345	\$44,678,952	\$20,150,251	235
Wholesale Trade	\$106,875,278	\$72,316,694	\$41,698,452	487
Retail Trade	\$1,009,745,085	\$740,215,975	\$427,292,943	13,966
Finance, Insurance, and Real Estate	\$414,063,064	\$109,556,438	\$41,370,431	446
Business Services	\$107,648,155	\$67,357,127	\$54,946,155	688
Health Services	\$76,920,005	\$53,916,647	\$45,587,024	775
Other Services	\$290,852,511	\$153,159,271	\$111,409,209	2,725
<b>TOTAL</b>	<b>\$2,856,664,655</b>	<b>\$1,589,432,028</b>	<b>\$960,257,723</b>	<b>22,483</b>

Source: US Multi-Regional Impact Assessment System, The Perryman Group

### The Current Annual Impact of Operations (Terminal, Air Carrier, Onsite Concession) and Other Ongoing Effects (Air Cargo, Other Tenants, and Visitor Spending) Associated with Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Permanent Jobs)</i>
Agriculture	\$250,446,942	\$66,674,513	\$44,701,377	728
Mining	\$400,294,892	\$89,914,738	\$45,817,389	260
Construction	\$550,927,923	\$291,677,898	\$240,360,755	3,473
Nondurable Manufacturing	\$3,051,091,992	\$938,563,436	\$505,483,584	9,121
Durable Manufacturing	\$1,339,173,164	\$599,208,834	\$387,762,410	5,197
Transportation and Utilities	\$12,516,496,047	\$7,373,373,092	\$4,824,016,424	66,655
Information	\$977,127,357	\$598,878,689	\$258,868,767	2,531
Wholesale Trade	\$1,207,772,230	\$817,291,330	\$471,257,463	5,505
Retail Trade	\$6,036,749,445	\$4,454,608,334	\$2,576,778,517	83,356
Finance, Insurance, and Real Estate	\$5,260,845,132	\$1,430,650,928	\$583,909,354	6,313
Business Services	\$2,038,099,433	\$1,256,369,283	\$1,024,875,398	12,826
Health Services	\$994,182,417	\$696,757,980	\$589,115,323	10,009
Other Services	\$2,390,670,394	\$1,156,201,315	\$914,726,531	22,027
<b>TOTAL</b>	<b>\$37,013,877,368</b>	<b>\$19,770,170,369</b>	<b>\$12,467,673,291</b>	<b>228,000</b>

Source: US Multi-Regional Impact Assessment System, The Perryman Group

## Economic Benefits of Current and Potential Construction and Expansion of Collateral Development at DFW Airport

## The Cumulative Impact (2011-2021) of Construction-Related Outlays Associated with the Terminal Renewal and Improvement Program (TRIP) at Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Person-Years)</i>
Agriculture	\$41,256,925	\$11,824,754	\$7,945,537	130
Mining	\$71,297,011	\$18,854,106	\$10,296,514	76
Construction	\$2,117,149,766	\$918,988,408	\$757,303,685	10,942
Nondurable Manufacturing	\$497,347,183	\$156,991,169	\$83,137,048	1,499
Durable Manufacturing	\$670,551,451	\$263,707,922	\$163,759,647	2,615
Transportation and Utilities	\$417,586,956	\$196,621,600	\$120,735,472	1,520
Information	\$141,017,578	\$86,732,707	\$37,418,212	363
Wholesale Trade	\$296,246,226	\$200,530,376	\$115,627,603	1,351
Retail Trade	\$910,334,432	\$687,517,814	\$400,516,352	12,499
Finance, Insurance, and Real Estate	\$896,272,348	\$221,709,387	\$89,323,621	967
Business Services	\$527,035,357	\$335,458,666	\$273,648,310	3,425
Health Services	\$185,613,979	\$130,074,588	\$109,979,273	1,869
Other Services	\$357,230,384	\$181,640,244	\$144,911,516	3,487
<b>TOTAL</b>	<b>\$7,128,939,596</b>	<b>\$3,410,651,741</b>	<b>\$2,314,602,790</b>	<b>40,742</b>
Source: US Multi-Regional Impact Assessment System, The Perryman Group				

## The Cumulative Anticipated 10-Year Impact of Construction-Related Outlays Associated with Concessions and Other Aspects of the Capital Improvement Program (CIP) (Excluding TRIP) at Dallas-Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Person Years)</i>
Agriculture	\$22,132,495	\$6,302,110	\$4,233,215	69
Mining	\$35,793,505	\$9,197,665	\$5,028,667	36
Construction	\$1,245,566,711	\$532,372,429	\$438,708,037	6,339
Nondurable Manufacturing	\$270,042,672	\$86,230,203	\$45,703,997	826
Durable Manufacturing	\$389,691,388	\$153,497,417	\$95,990,564	1,526
Transportation and Utilities	\$225,987,501	\$106,347,031	\$65,292,354	822
Information	\$74,347,156	\$45,915,217	\$19,807,104	192
Wholesale Trade	\$173,764,145	\$117,639,310	\$67,831,876	792
Retail Trade	\$497,217,376	\$376,134,183	\$219,228,781	6,824
Finance, Insurance, and Real Estate	\$480,962,529	\$118,835,512	\$48,163,675	522
Business Services	\$190,540,758	\$119,358,724	\$97,366,132	1,219
Health Services	\$99,847,812	\$70,003,923	\$59,188,965	1,006
Other Services	\$191,931,488	\$97,382,831	\$77,760,599	1,872
<b>TOTAL</b>	<b>\$3,897,825,536</b>	<b>\$1,839,216,555</b>	<b>\$1,244,303,965</b>	<b>22,044</b>

Source: US Multi-Regional Impact Assessment System, The Perryman Group

## The Cumulative Anticipated 10-Year Impact of Construction-Related Outlays Associated with the Federal Aviation Administration's Airport Improvement Program (AIP) at Dallas-Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Person Years)</i>
Agriculture	\$4,956,448	\$1,615,573	\$1,088,201	18
Mining	\$13,056,716	\$3,855,719	\$2,112,891	17
Construction	\$254,760,523	\$100,159,411	\$82,537,592	1,193
Nondurable Manufacturing	\$61,215,362	\$17,958,407	\$9,436,292	164
Durable Manufacturing	\$70,488,674	\$29,311,550	\$17,496,141	279
Transportation and Utilities	\$54,218,186	\$26,587,387	\$16,526,341	212
Information	\$15,546,799	\$9,546,859	\$4,118,718	40
Wholesale Trade	\$31,502,262	\$21,318,788	\$12,292,603	144
Retail Trade	\$97,664,901	\$73,500,915	\$42,771,582	1,342
Finance, Insurance, and Real Estate	\$100,731,915	\$25,013,766	\$10,061,238	109
Business Services	\$59,814,176	\$37,614,498	\$30,683,792	384
Health Services	\$20,713,254	\$14,515,900	\$12,273,328	209
Other Services	\$40,404,794	\$20,434,126	\$16,322,875	393
<b>TOTAL</b>	<b>\$825,074,010</b>	<b>\$381,432,899</b>	<b>\$257,721,594</b>	<b>4,503</b>

Source: US Multi-Regional Impact Assessment System, The Perryman Group

## The Cumulative Impact (2011-2015) of Construction-Related Outlays Associated with Tenants at Dallas/Fort Worth International Airport on Business Activity in the North Central Texas Region

Sector	Total Expenditures (2015 Dollars)	Real Gross Product (2015 Dollars)	Personal Income (2015 Dollars)	Employment (Person-Years)
Agriculture	\$8,992,613	\$2,490,880	\$1,672,643	27
Mining	\$13,946,365	\$3,472,668	\$1,884,188	13
Construction	\$490,549,871	\$242,400,263	\$199,752,913	2,886
Nondurable Manufacturing	\$104,540,076	\$33,063,366	\$17,501,675	319
Durable Manufacturing	\$145,889,614	\$57,703,769	\$36,445,618	573
Transportation and Utilities	\$92,496,438	\$43,666,975	\$26,829,869	338
Information	\$29,879,707	\$18,429,910	\$7,951,676	77
Wholesale Trade	\$64,536,703	\$43,674,945	\$25,183,362	294
Retail Trade	\$200,021,707	\$151,095,000	\$88,015,457	2,748
Finance, Insurance, and Real Estate	\$197,811,724	\$48,393,173	\$19,635,647	213
Business Services	\$72,344,389	\$45,240,304	\$36,904,493	462
Health Services	\$41,463,011	\$29,047,522	\$24,559,946	417
Other Services	\$77,201,605	\$39,550,789	\$31,551,516	759
<b>TOTAL</b>	<b>\$1,539,673,823</b>	<b>\$758,229,564</b>	<b>\$517,889,003</b>	<b>9,126</b>
Source: US Multi-Regional Impact Assessment System, The Perryman Group				

### The Cumulative Impact of Construction-Related Outlays Associated with Potential Development of Available Land at Dallas-Fort Worth International Airport on Business Activity in the North Central Texas Region\*

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Person Years)</i>
Agriculture	\$109,101,002	\$31,300,661	\$21,032,743	343
Mining	\$179,061,067	\$46,505,685	\$25,372,420	182
Construction	\$5,651,674,312	\$2,506,286,604	\$2,065,336,258	29,842
Nondurable Manufacturing	\$1,305,515,643	\$414,840,898	\$219,692,545	3,973
Durable Manufacturing	\$1,755,825,912	\$699,487,021	\$435,593,273	6,908
Transportation and Utilities	\$1,094,414,134	\$513,616,582	\$315,079,845	3,961
Information	\$368,511,817	\$226,800,017	\$97,850,463	948
Wholesale Trade	\$789,660,505	\$534,423,640	\$308,153,431	3,600
Retail Trade	\$2,409,191,622	\$1,820,005,753	\$1,060,270,265	33,085
Finance, Insurance, and Real Estate	\$2,368,137,996	\$585,403,561	\$235,877,669	2,553
Business Services	\$1,293,019,276	\$824,614,832	\$672,674,403	8,418
Health Services	\$491,237,834	\$344,253,716	\$291,069,706	4,946
Other Services	\$937,978,749	\$477,790,166	\$381,127,166	9,170
<b>TOTAL</b>	<b>\$18,753,329,869</b>	<b>\$9,025,329,136</b>	<b>\$6,129,130,187</b>	<b>107,931</b>

\*Estimates based on long-term buildout in accordance with current land-use plans with conservative coverage ratios and facilities comporting to typical patterns in areas adjacent to airports. This segment of the analysis made use of information from the Jones Lang LaSalle study as referenced in Appendix B. Source: US Multi-Regional Impact Assessment System, The Perryman Group



### The Potential Annual Impact (at Maturity) of Operations Associated with Properties Available for Development at Dallas-Fort Worth International Airport on Business Activity in the North Central Texas Region\*

Sector	Total Expenditures	Real Gross Product	Personal Income	Employment
	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(2015 Dollars)</i>	<i>(Permanent Jobs)</i>
Agriculture	\$196,772,387	\$54,169,547	\$8,619,322	593
Mining	\$206,205,089	\$47,062,537	\$3,972,707	151
Construction	\$428,513,732	\$226,584,743	\$34,745,960	2,698
Nondurable Manufacturing	\$2,172,463,100	\$691,938,527	\$57,714,427	6,754
Durable Manufacturing	\$3,281,704,822	\$1,885,123,563	\$22,367,699	15,206
Transportation and Utilities	\$1,951,445,492	\$947,727,267	\$66,823,998	7,395
Information	\$692,305,067	\$422,001,784	\$33,870,390	1,909
Wholesale Trade	\$1,472,283,774	\$996,089,729	\$271,432,928	6,709
Retail Trade	\$4,781,050,141	\$3,585,490,698	\$292,659,457	65,773
Finance, Insurance, and Real Estate	\$3,950,494,477	\$1,021,701,995	\$54,681,008	4,238
Business Services	\$5,406,459,212	\$3,661,907,430	\$88,885,754	37,383
Health Services	\$778,913,068	\$545,987,078	\$57,993,171	7,844
Other Services	\$2,032,803,603	\$1,023,818,258	\$225,120,009	18,937
<b>TOTAL</b>	<b>\$27,351,413,963</b>	<b>\$15,109,603,156</b>	<b>\$1,218,886,830</b>	<b>175,590</b>

\*Estimates based on land use development scenario previously described, with employment allocations reflecting standard square-footage patterns and fully adjusted for normal vacancy and turnover patterns. This segment of the analysis made use of information from the Jones Lang LaSalle study as referenced in Appendix B.

Source: US Multi-Regional Impact Assessment System, The Perryman Group

## **Appendix D: Detailed Forecast Results**

This section includes results from The Perryman Group's most recent long-term economic forecast for the North Central Texas Council of Governments Region which includes Collin, Dallas, Denton, Ellis, Erath, Hood, Hunt, Johnson, Kaufman, Navarro, Palo Pinto, Parker, Rockwall, Somervell, Tarrant, and Wise Counties.

## Definition of Terms

**Compound Annual Growth Rates (CAGR):** A *CAGR* differs from a simple growth rate in that it reflects changes in the size of the base used to calculate growth. The idea of compounding is routine in calculating interest; interest for the current period is calculated on the principle plus previously accrued interest.

**Nominal and Real Values:** *Real* variables are adjusted for the effects of inflation; *nominal* values are not. Real variables are expressed in terms of dollars (or rates such as interest rates) at a particular point in time (2009 at present); therefore, the pattern in real variables over time removes distortions caused by changes in the value of the dollar (inflation).

**Gross Area Product, Real Gross Area Product (RGP):** *Gross area product*, often referred to as output, is the final value of all goods and services produced in an economy during a given period of time. RGP is gross area product adjusted for inflation.

**Personal Income (by place of residence):** *Personal income* is the total income accruing to households. "By place of residence" denotes where the income-earner resides rather than works. *Real personal income* is expressed on an inflation-adjusted basis.

**Personal Income (by place of work):** *Personal income* is total earnings expressed at the location where the earnings occur.

**Wage and Salary Employment:** *Wage and salary employment* is a measure of the number of persons in the workforce excluding proprietors, but including agricultural workers and military personnel.

**Population:** *Population* is the total number of persons residing in a specific area.

**Real Retail Sales:** *Retail sales* is the total volume of retail goods sold. It is expressed on an inflation-adjusted basis.

## Definition of Sectors

**Mining:** This sector is composed of companies primarily involved in the extraction of minerals occurring naturally. Mining includes quarrying, oil and gas well operations, milling, and other activities which are a part of mining activity. In Texas, this sector is largely oil and gas related.

**Construction:** Companies in this sector are primarily engaged in construction activities including new work, additions, alterations, and repairs. Construction includes buildings, water systems, highways, utility plants, and other related projects.

**Trade:** Trade establishments are involved in wholesale and retail trade—selling items and rendering services incidental to the sale of goods. Examples include wholesale distributors, food stores, and clothing stores.

**FIRE (Finance, Insurance, and Real Estate):** This sector includes companies in the fields of finance, insurance, and real estate such as depository institutions, credit institutions, holding companies, insurance carriers, insurance agents, real estate buyers, real estate sellers, real estate agents, and real estate developers.

**Nondurable Manufacturing:** These companies are engaged in the mechanical or chemical transformation of materials or substances into items consumed in a short time period such as paper, bread, chemicals, and clothing.

**Durable Manufacturing:** Companies in this sector are primarily engaged in the mechanical or chemical transformation of materials or substances into goods typically consumed over a period of several years such as automobiles, washing machines, industrial machinery, and computers.

**Services:** This sector includes companies providing services to individuals, businesses, or government entities. Examples include medical services, business services (excluding finance, insurance, and real estate), hotels, and amusements.

**Government:** All government establishments involved in public administration including the executive, legislative, judicial, administrative, and regulatory activities of Federal, state, local, and international governments are included in this sector. Military activity is also included.

**Transportation, Warehousing, and Utilities:** Companies in this sector are engaged in transportation, warehousing, electric, water, and sanitary services (including all establishments of the US Postal Service).

## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

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**Agriculture:** These establishments are engaged in farming, ranching, commercial fishing, forestry, hunting and trapping, and related services.

**Information:** This sector includes those establishments that create, disseminate, or provide the means to distribute information. It also includes establishments that provide data processing services. Industries included in this new sector are newspaper, book, and periodical publishers, previously included in the manufacturing sector in the SIC; software publishers, previously included in services; broadcasting and telecommunications producers and distributors, previously included with utilities and transportation; and motion picture and sound recording industries, information services, and data processing services, previously included in services.

## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

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Historical and Projected Values of Key Economic Indicators  
for the North Central Texas Region

## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

Year	Gross Area Product	Real Gross Area Product	Personal Income (residence)	Real Personal Income (residence)	Personal Income (work)	Real Personal Income (work)	Total Employment	Wage and Salary Employment	Population	Gross Product Deflator	Texas Consumer Price Index	Industrial Production Index	Labor Productivity	Retail Sales	Real Retail Sales
2001	\$258,140.371	\$310,983.961	\$188,907.137	\$222,376.689	\$167,730.637	\$197,448.251	3,530.176	2,921.847	5,482.163	83.01	84.95	79.88	\$106,434	\$82,221.433	\$96,788.985
2002	\$268,652.616	\$320,709.721	\$190,620.763	\$221,227.273	\$168,818.131	\$195,923.960	3,500.128	2,860.488	5,589.644	83.77	86.17	84.41	\$112,117	\$81,544.096	\$94,637.005
2003	\$276,170.147	\$319,256.868	\$194,933.713	\$221,723.791	\$171,102.467	\$194,617.376	3,492.619	2,818.802	5,683.288	86.50	87.92	81.36	\$113,260	\$83,702.014	\$95,205.327
2004	\$296,618.380	\$332,500.077	\$204,840.995	\$229,685.592	\$179,953.605	\$201,779.680	3,583.301	2,854.734	5,775.041	89.21	89.18	91.44	\$116,473	\$94,922.284	\$106,435.145
2005	\$319,035.132	\$342,649.960	\$221,543.354	\$240,526.249	\$190,612.208	\$206,944.775	3,700.182	2,925.934	5,886.244	93.11	92.11	94.99	\$117,108	\$99,175.984	\$107,673.857
2006	\$345,036.316	\$359,460.058	\$242,454.352	\$255,816.540	\$207,675.704	\$219,121.164	3,847.172	3,032.033	6,054.307	95.99	94.78	103.80	\$118,554	\$102,390.767	\$108,033.745
2007	\$362,577.393	\$368,269.225	\$256,199.868	\$265,641.383	\$215,757.306	\$223,708.426	3,987.939	3,115.317	6,193.536	98.45	96.45	107.85	\$118,212	\$102,987.022	\$106,782.315
2008	\$380,389.353	\$371,613.649	\$275,650.864	\$274,091.770	\$226,996.913	\$225,713.008	4,084.218	3,170.311	6,323.576	102.36	100.57	105.59	\$117,217	\$118,985.664	\$118,312.676
2009	\$358,476.262	\$358,476.262	\$260,133.590	\$260,133.590	\$214,559.143	\$214,559.143	4,006.102	3,052.876	6,454.989	100.00	100.00	100.00	\$117,422	\$101,178.532	\$101,178.532
2010	\$380,700.662	\$371,692.449	\$271,099.853	\$269,572.851	\$223,101.088	\$221,844.445	4,007.941	3,042.284	6,566.517	102.42	100.57	107.55	\$122,175	\$101,009.436	\$100,440.489
2011	\$407,780.012	\$385,846.995	\$296,984.429	\$286,185.625	\$239,426.620	\$230,720.705	4,147.415	3,121.572	6,684.195	105.68	103.77	114.41	\$123,607	\$105,932.976	\$102,081.092
2012	\$436,232.373	\$406,564.584	\$313,086.150	\$295,801.046	\$253,511.772	\$239,515.697	4,259.973	3,207.628	6,816.147	107.30	105.84	126.34	\$126,749	\$110,494.526	\$104,394.259
2013	\$475,361.556	\$428,022.776	\$328,472.273	\$305,836.122	\$266,586.043	\$248,214.684	4,378.792	3,293.766	6,945.046	111.06	107.40	134.39	\$129,949	\$116,715.887	\$108,672.594
2014	\$515,905.906	\$451,916.747	\$348,570.096	\$318,608.268	\$284,685.276	\$260,214.756	4,509.350	3,409.956	7,089.996	114.16	109.40	142.64	\$132,529	\$125,770.840	\$114,960.033
2015	\$545,563.886	\$466,164.632	\$367,297.347	\$330,802.548	\$293,964.602	\$264,756.171	4,570.045	3,460.794	7,142.700	117.03	111.03	145.32	\$134,699	\$132,654.750	\$119,474.126
2016	\$582,560.964	\$485,303.645	\$391,651.600	\$346,865.812	\$311,008.254	\$275,444.120	4,665.701	3,538.287	7,257.599	120.04	112.91	151.19	\$137,158	\$141,586.228	\$125,395.688
2017	\$623,575.577	\$506,128.131	\$419,315.168	\$364,592.485	\$331,897.397	\$288,583.162	4,763.157	3,617.061	7,382.582	123.21	115.01	158.61	\$139,928	\$151,732.521	\$131,930.684
2018	\$668,592.710	\$528,434.558	\$450,066.780	\$382,833.008	\$356,176.421	\$302,968.574	4,862.987	3,697.480	7,513.130	126.52	117.56	167.19	\$142,917	\$163,017.019	\$138,664.524
2019	\$716,249.740	\$551,290.007	\$482,933.350	\$401,489.961	\$382,218.884	\$317,760.297	4,962.181	3,777.360	7,645.672	129.92	120.29	176.08	\$145,946	\$175,090.246	\$145,562.480
2020	\$764,214.581	\$573,450.307	\$516,279.171	\$419,550.292	\$407,353.451	\$331,032.645	5,058.629	3,855.056	7,773.953	133.27	123.06	183.63	\$148,753	\$187,360.915	\$152,257.404
2021	\$814,686.401	\$596,101.512	\$551,629.114	\$438,225.454	\$433,909.288	\$344,706.416	5,155.348	3,932.876	7,903.954	136.67	125.88	191.33	\$151,569	\$200,383.552	\$159,188.793
2022	\$867,729.494	\$619,229.422	\$589,081.263	\$457,525.909	\$461,950.406	\$358,786.287	5,252.220	4,010.746	8,035.689	140.13	128.75	199.16	\$154,393	\$214,196.045	\$166,361.157
2023	\$923,400.659	\$642,816.652	\$628,736.509	\$477,461.427	\$491,541.954	\$373,276.117	5,349.128	4,088.585	8,169.171	143.65	131.68	207.12	\$157,222	\$228,837.453	\$173,778.770
2024	\$981,752.608	\$666,845.228	\$670,699.019	\$498,041.437	\$522,750.942	\$388,179.531	5,445.953	4,166.315	8,304.413	147.22	134.67	215.19	\$160,056	\$244,348.184	\$181,445.801
2025	\$1,042,830.392	\$691,294.326	\$715,076.102	\$519,274.901	\$555,646.023	\$403,499.757	5,542.575	4,243.851	8,441.425	150.85	137.71	223.36	\$162,893	\$260,769.952	\$189,366.265
2026	\$1,106,675.593	\$716,143.406	\$761,978.311	\$541,170.362	\$590,297.650	\$419,239.745	5,638.873	4,321.110	8,580.222	154.53	140.80	231.63	\$165,731	\$278,145.822	\$197,544.042
2027	\$1,173,322.068	\$741,369.702	\$811,518.827	\$563,735.503	\$626,777.128	\$435,401.506	5,734.724	4,398.006	8,720.814	158.26	143.95	239.99	\$168,570	\$296,519.994	\$205,982.711
2028	\$1,242,801.406	\$766,951.731	\$863,814.408	\$586,977.817	\$665,158.102	\$451,987.194	5,830.008	4,474.452	8,863.214	162.04	147.16	248.41	\$171,407	\$315,938.150	\$214,685.798
2029	\$1,315,133.200	\$792,863.604	\$918,984.296	\$610,903.847	\$705,514.900	\$468,997.967	5,924.601	4,550.359	9,007.433	165.87	150.43	256.90	\$174,242	\$336,447.066	\$223,656.495
2030	\$1,390,335.656	\$819,081.736	\$977,150.719	\$635,519.553	\$747,923.341	\$486,434.587	6,018.379	4,625.637	9,153.483	169.74	153.76	265.44	\$177,074	\$358,094.799	\$232,897.794
2031	\$1,468,427.834	\$845,582.951	\$1,038,438.730	\$660,830.219	\$792,460.543	\$504,297.326	6,111.221	4,700.198	9,301.375	173.66	157.14	274.02	\$179,904	\$380,930.638	\$242,412.450
2032	\$1,549,398.686	\$872,334.514	\$1,102,975.547	\$686,840.071	\$839,203.980	\$522,585.403	6,203.000	4,773.948	9,451.120	177.62	160.59	282.65	\$182,728	\$405,004.863	\$252,202.843
2033	\$1,633,242.793	\$899,309.520	\$1,170,891.531	\$713,552.930	\$888,233.039	\$541,298.037	6,293.595	4,846.797	9,602.729	181.61	164.09	291.30	\$185,547	\$430,369.113	\$262,271.213
2034	\$1,719,950.327	\$926,481.561	\$1,242,319.684	\$740,971.919	\$939,628.343	\$560,434.022	6,382.883	4,918.653	9,756.213	185.64	167.66	299.97	\$188,361	\$457,076.207	\$272,619.551
2035	\$1,809,504.888	\$953,823.952	\$1,317,394.293	\$769,098.708	\$993,469.798	\$579,990.624	6,470.741	4,989.424	9,911.582	189.71	171.29	308.65	\$191,169	\$485,179.652	\$283,249.324
2036	\$1,901,885.131	\$981,310.532	\$1,396,252.113	\$797,934.300	\$1,049,838.493	\$599,964.817	6,557.047	5,059.017	10,068.847	193.81	174.98	317.34	\$193,973	\$514,734.077	\$294,161.758
2037	\$1,997,065.464	\$1,008,915.807	\$1,479,032.336	\$827,479.060	\$1,108,816.787	\$620,353.355	6,641.681	5,127.343	10,228.020	197.94	178.74	326.03	\$196,772	\$545,795.238	\$305,357.848
2038	\$2,095,014.125	\$1,036,614.289	\$1,565,874.681	\$857,731.705	\$1,170,485.561	\$641,151.293	6,724.523	5,194.310	10,389.113	202.10	182.56	334.73	\$199,567	\$578,419.307	\$316,619.985
2039	\$2,195,696.385	\$1,064,381.587	\$1,656,921.142	\$888,690.394	\$1,234,927.022	\$662,353.660	6,805.457	5,259.829	10,552.135	206.29	186.45	343.42	\$202,361	\$612,663.528	\$328,602.357
2040	\$2,299,073.086	\$1,092,193.895	\$1,752,314.241	\$920,351.846	\$1,302,222.242	\$683,954.177	6,884.365	5,323.810	10,717.098	210.50	190.40	352.12	\$205,153	\$648,585.572	\$340,650.617

Historical and Projected Values of Per Capita Key Economic Indicators  
for North Central Texas Region



## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

Year	Per Capita Gross Area Product	Per Capita Real Gross Area Product	Per Capita Personal Income (by residence)	Per Capita Real Personal Income (by residence)	Per Capita Retail Sales	Per Capita Real Retail Sales
2001	\$47.087	\$56.727	\$34.459	\$40.564	\$14.998	\$17.655
2002	\$48.063	\$57.376	\$34.102	\$39.578	\$14.588	\$16.931
2003	\$48.593	\$56.175	\$34.299	\$39.013	\$14.728	\$16.752
2004	\$51.362	\$57.575	\$35.470	\$39.772	\$16.437	\$18.430
2005	\$54.200	\$58.212	\$37.637	\$40.862	\$16.849	\$18.292
2006	\$56.990	\$59.373	\$40.047	\$42.254	\$16.912	\$17.844
2007	\$58.541	\$59.460	\$41.366	\$42.890	\$16.628	\$17.241
2008	\$60.154	\$58.766	\$43.591	\$43.344	\$18.816	\$18.710
2009	\$55.535	\$55.535	\$40.300	\$40.300	\$15.674	\$15.674
2010	\$57.976	\$56.604	\$41.285	\$41.053	\$15.382	\$15.296
2011	\$61.007	\$57.725	\$44.431	\$42.815	\$15.848	\$15.272
2012	\$64.000	\$59.647	\$45.933	\$43.397	\$16.211	\$15.316
2013	\$68.446	\$61.630	\$47.296	\$44.037	\$16.806	\$15.647
2014	\$72.765	\$63.740	\$49.164	\$44.938	\$17.739	\$16.214
2015	\$76.381	\$65.264	\$51.423	\$46.313	\$18.572	\$16.727
2016	\$80.269	\$66.868	\$53.964	\$47.793	\$19.509	\$17.278
2017	\$84.466	\$68.557	\$56.798	\$49.385	\$20.553	\$17.871
2018	\$88.990	\$70.335	\$59.904	\$50.955	\$21.698	\$18.456
2019	\$93.680	\$72.105	\$63.164	\$52.512	\$22.901	\$19.039
2020	\$98.304	\$73.766	\$66.411	\$53.969	\$24.101	\$19.586
2021	\$103.073	\$75.418	\$69.792	\$55.444	\$25.352	\$20.140
2022	\$107.984	\$77.060	\$73.308	\$56.937	\$26.656	\$20.703
2023	\$113.035	\$78.688	\$76.965	\$58.447	\$28.012	\$21.273
2024	\$118.221	\$80.300	\$80.764	\$59.973	\$29.424	\$21.849
2025	\$123.537	\$81.893	\$84.710	\$61.515	\$30.892	\$22.433
2026	\$128.980	\$83.464	\$88.806	\$63.072	\$32.417	\$23.023
2027	\$134.543	\$85.012	\$93.055	\$64.643	\$34.001	\$23.620
2028	\$140.220	\$86.532	\$97.461	\$66.226	\$35.646	\$24.222
2029	\$146.005	\$88.023	\$102.025	\$67.822	\$37.352	\$24.830
2030	\$151.891	\$89.483	\$106.752	\$69.429	\$39.121	\$25.444
2031	\$157.872	\$90.909	\$111.644	\$71.047	\$40.954	\$26.062
2032	\$163.938	\$92.300	\$116.703	\$72.673	\$42.853	\$26.685
2033	\$170.081	\$93.651	\$121.933	\$74.307	\$44.817	\$27.312
2034	\$176.293	\$94.963	\$127.336	\$75.949	\$46.850	\$27.943
2035	\$182.565	\$96.233	\$132.915	\$77.596	\$48.951	\$28.578
2036	\$188.888	\$97.460	\$138.671	\$79.248	\$51.121	\$29.215
2037	\$195.254	\$98.642	\$144.606	\$80.903	\$53.363	\$29.855
2038	\$201.655	\$99.779	\$150.723	\$82.561	\$55.676	\$30.497
2039	\$208.081	\$100.869	\$157.022	\$84.219	\$58.061	\$31.141
2040	\$214.524	\$101.911	\$163.506	\$85.877	\$60.519	\$31.786

## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

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Historical and Projected Values of Nominal Gross Product  
by Major Industrial Classification for North Central Texas Region

## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

Year	Agriculture	Mining	Construction	Total Manufacturing	Durable Manufacturing	Nondurable Manufacturing	Trade	Transportation, Warehousing & Utilities	Information	Finance, Insurance & Real Estate	Services	Government	Total All Industries
2001	\$282.409	\$9,099.902	\$12,002.259	\$33,746.552	\$21,529.424	\$12,217.128	\$39,430.511	\$13,919.051	\$18,479.572	\$53,545.405	\$58,535.754	\$19,098.955	\$258,140.371
2002	\$319.645	\$8,772.765	\$12,448.520	\$35,221.024	\$23,613.224	\$11,607.800	\$39,891.517	\$14,079.797	\$19,020.687	\$57,713.195	\$60,568.388	\$20,617.079	\$268,652.616
2003	\$349.735	\$11,368.898	\$13,195.688	\$34,935.142	\$22,554.519	\$12,380.623	\$40,992.360	\$14,654.831	\$18,349.587	\$58,211.222	\$62,293.355	\$21,819.330	\$276,170.147
2004	\$436.334	\$12,956.941	\$14,496.900	\$42,255.278	\$25,719.377	\$16,535.901	\$42,569.320	\$15,886.870	\$19,659.780	\$58,574.417	\$66,889.705	\$22,892.835	\$296,618.380
2005	\$341.565	\$18,076.921	\$16,080.502	\$45,577.722	\$27,716.012	\$17,861.710	\$45,898.089	\$16,494.280	\$19,806.992	\$61,231.327	\$71,259.440	\$24,268.294	\$319,035.132
2006	\$407.436	\$21,169.378	\$17,648.529	\$50,263.421	\$30,464.424	\$19,798.997	\$48,400.793	\$18,368.769	\$20,340.267	\$64,898.312	\$78,077.548	\$25,461.864	\$345,036.316
2007	\$438.597	\$23,350.822	\$18,490.314	\$51,929.416	\$31,163.549	\$20,765.867	\$50,277.551	\$19,252.996	\$20,367.278	\$66,997.622	\$84,287.436	\$27,185.360	\$362,577.393
2008	\$412.856	\$34,848.019	\$17,224.037	\$48,779.519	\$31,359.461	\$17,420.059	\$51,138.104	\$19,273.824	\$21,762.799	\$68,923.276	\$89,233.212	\$28,793.709	\$380,389.353
2009	\$310.958	\$20,569.976	\$15,947.173	\$45,488.457	\$28,547.745	\$16,940.713	\$49,146.743	\$18,474.540	\$21,118.733	\$68,921.492	\$88,176.835	\$30,321.354	\$358,476.262
2010	\$375.942	\$26,094.325	\$15,475.816	\$50,918.935	\$29,729.843	\$21,189.092	\$50,856.121	\$19,561.415	\$20,674.874	\$72,955.984	\$92,068.906	\$31,718.343	\$380,700.662
2011	\$363.378	\$33,698.244	\$15,833.061	\$56,834.008	\$31,322.775	\$25,511.233	\$52,905.059	\$21,001.900	\$21,259.420	\$77,403.263	\$96,667.344	\$31,814.334	\$407,780.012
2012	\$444.200	\$36,622.412	\$17,298.524	\$61,868.251	\$33,158.747	\$28,709.504	\$56,819.919	\$23,735.171	\$22,018.982	\$82,385.623	\$103,002.257	\$32,037.033	\$436,232.373
2013	\$410.307	\$47,097.268	\$18,894.028	\$64,760.438	\$34,625.091	\$30,135.347	\$60,997.821	\$25,388.692	\$22,710.033	\$89,213.546	\$111,839.340	\$34,050.083	\$475,361.556
2014	\$431.057	\$54,824.044	\$20,882.349	\$67,759.925	\$36,043.183	\$31,716.742	\$66,043.642	\$27,458.894	\$23,624.084	\$95,213.914	\$123,355.246	\$36,312.751	\$515,905.906
2015	\$450.489	\$56,143.674	\$21,716.874	\$71,313.302	\$37,403.117	\$33,910.185	\$70,183.211	\$28,906.924	\$24,906.280	\$100,585.902	\$133,002.127	\$38,355.102	\$545,563.886
2016	\$470.966	\$60,029.847	\$22,883.562	\$75,980.235	\$39,674.785	\$36,305.450	\$75,136.814	\$30,552.344	\$26,361.303	\$106,243.773	\$144,295.163	\$40,606.957	\$582,560.964
2017	\$490.181	\$66,234.181	\$24,187.024	\$80,836.738	\$42,147.150	\$38,689.588	\$80,262.156	\$32,196.216	\$27,869.553	\$112,175.069	\$156,356.125	\$42,968.335	\$623,575.577
2018	\$510.551	\$74,560.667	\$25,778.795	\$85,811.342	\$44,601.662	\$41,209.679	\$85,584.715	\$33,865.639	\$29,430.569	\$118,388.736	\$169,218.654	\$45,443.042	\$668,592.710
2019	\$531.546	\$83,681.573	\$27,403.499	\$91,046.279	\$47,155.826	\$43,890.452	\$91,103.768	\$35,594.539	\$31,043.690	\$124,893.766	\$182,916.158	\$48,034.923	\$716,249.740
2020	\$553.467	\$90,850.783	\$28,980.656	\$96,572.044	\$49,731.411	\$46,840.633	\$96,641.752	\$37,507.284	\$32,661.695	\$132,236.650	\$197,451.151	\$50,759.097	\$764,214.581
2021	\$576.053	\$98,373.132	\$30,635.545	\$102,410.692	\$52,423.671	\$49,987.021	\$102,433.116	\$39,492.242	\$34,325.062	\$139,949.368	\$212,881.718	\$53,609.474	\$814,686.401
2022	\$599.310	\$106,241.808	\$32,369.943	\$108,578.674	\$55,236.329	\$53,342.345	\$108,483.353	\$41,549.800	\$36,032.301	\$148,045.271	\$229,238.984	\$56,590.050	\$867,729.494
2023	\$623.247	\$114,444.258	\$34,185.326	\$115,092.571	\$58,173.157	\$56,919.413	\$114,797.637	\$43,680.146	\$37,781.705	\$156,537.913	\$246,553.021	\$59,704.836	\$923,400.659
2024	\$647.870	\$122,963.045	\$36,084.933	\$121,969.874	\$61,237.986	\$60,731.889	\$121,380.782	\$45,883.246	\$39,571.361	\$165,441.036	\$264,852.613	\$62,957.846	\$981,752.608
2025	\$673.186	\$131,776.325	\$38,070.141	\$129,228.870	\$64,434.700	\$64,794.170	\$128,237.206	\$48,158.837	\$41,399.137	\$174,768.570	\$284,165.030	\$66,353.089	\$1,042,830.392
2026	\$699.200	\$140,858.115	\$40,144.436	\$136,888.891	\$67,767.247	\$69,121.643	\$135,370.896	\$50,506.401	\$43,262.697	\$184,534.623	\$304,515.775	\$69,894.561	\$1,106,675.593
2027	\$725.916	\$150,178.460	\$42,310.095	\$144,969.515	\$71,239.639	\$73,729.876	\$142,785.364	\$52,925.157	\$45,159.494	\$194,753.488	\$325,928.344	\$73,586.235	\$1,173,322.068
2028	\$753.339	\$159,703.566	\$44,572.302	\$153,492.092	\$74,855.957	\$78,636.134	\$150,483.618	\$55,414.040	\$47,086.783	\$205,439.651	\$348,423.964	\$77,432.051	\$1,242,801.406
2029	\$781.474	\$169,395.940	\$46,931.047	\$162,478.281	\$78,620.360	\$83,857.921	\$158,468.117	\$57,971.689	\$49,041.617	\$216,607.789	\$372,021.339	\$81,435.909	\$1,315,133.200
2030	\$810.321	\$179,214.571	\$49,390.936	\$171,950.971	\$82,537.093	\$89,413.879	\$166,740.735	\$60,596.427	\$51,020.861	\$228,272.791	\$396,736.391	\$85,601.651	\$1,390,335.656
2031	\$839.884	\$189,129.821	\$51,948.616	\$181,934.716	\$86,610.502	\$95,324.215	\$175,302.729	\$63,286.209	\$53,021.190	\$240,449.613	\$422,581.997	\$89,933.058	\$1,468,427.834
2032	\$870.164	\$199,087.260	\$54,599.992	\$192,453.775	\$90,845.024	\$101,608.751	\$184,154.692	\$66,038.694	\$55,039.122	\$253,153.421	\$449,567.732	\$94,433.834	\$1,549,398.686
2033	\$901.161	\$209,034.906	\$57,346.499	\$203,534.699	\$95,245.225	\$108,289.474	\$193,296.525	\$68,851.182	\$57,071.002	\$266,399.606	\$477,699.617	\$99,107.596	\$1,633,242.793
2034	\$932.875	\$218,919.768	\$60,189.381	\$215,205.716	\$99,815.805	\$115,389.912	\$202,727.402	\$71,720.624	\$59,113.022	\$280,203.805	\$506,979.875	\$103,957.859	\$1,719,950.327
2035	\$965.305	\$228,687.527	\$63,129.695	\$227,495.120	\$104,561.615	\$122,933.504	\$212,445.733	\$74,643.620	\$61,161.240	\$294,581.938	\$537,406.682	\$108,988.027	\$1,809,504.888
2036	\$998.451	\$238,282.402	\$66,168.306	\$240,432.667	\$109,487.644	\$130,945.023	\$222,449.158	\$77,616.680	\$63,211.615	\$309,550.496	\$568,973.977	\$114,201.379	\$1,901,885.131
2037	\$1,032.310	\$247,647.816	\$69,305.888	\$254,050.303	\$114,599.064	\$139,451.239	\$232,734.495	\$80,636.007	\$65,259.999	\$325,126.372	\$601,671.217	\$119,601.056	\$1,997,065.464
2038	\$1,066.881	\$256,726.884	\$72,542.915	\$268,379.915	\$119,901.262	\$148,478.652	\$243,297.714	\$83,697.501	\$67,302.149	\$341,326.938	\$635,483.183	\$125,190.044	\$2,095,014.125
2039	\$1,102.160	\$265,462.954	\$75,879.659	\$283,456.119	\$125,399.869	\$158,056.251	\$254,133.912	\$86,796.760	\$69,333.745	\$358,170.109	\$670,389.797	\$130,971.169	\$2,195,696.385
2040	\$1,138.144	\$273,800.199	\$79,316.181	\$299,314.334	\$131,100.786	\$168,213.547	\$265,237.288	\$89,929.092	\$71,350.401	\$375,674.415	\$706,365.957	\$136,947.075	\$2,299,073.086

## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

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Historical and Projected Values of Real Gross Product  
by Major Industrial Classification for North Central Texas Region

## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

Year	Agriculture	Mining	Construction	Total Manufacturing	Durable Manufacturing	Nondurable Manufacturing	Trade	Transportation, Warehousing & Utilities	Information	Finance, Insurance & Real Estate	Services	Government	Total All Industries
2001	\$286.663	\$16,850.673	\$18,542.870	\$33,953.653	\$18,901.082	\$15,052.572	\$46,480.076	\$16,719.695	\$16,812.297	\$61,533.394	\$73,880.969	\$25,923.670	\$310,983.961
2002	\$350.488	\$19,125.387	\$18,364.009	\$35,359.475	\$20,836.592	\$14,522.883	\$47,193.025	\$16,873.570	\$17,514.903	\$64,346.838	\$74,607.779	\$26,974.248	\$320,709.721
2003	\$347.151	\$15,777.726	\$18,600.289	\$35,686.556	\$20,302.875	\$15,383.681	\$48,928.506	\$17,314.644	\$16,943.868	\$63,040.562	\$75,199.945	\$27,417.622	\$319,256.868
2004	\$373.778	\$14,589.565	\$18,972.085	\$43,906.501	\$23,548.822	\$20,357.679	\$49,550.649	\$18,800.953	\$18,448.851	\$62,222.674	\$78,253.739	\$27,381.282	\$332,500.077
2005	\$341.641	\$14,482.591	\$18,973.497	\$46,742.509	\$26,021.213	\$20,721.295	\$52,123.645	\$19,069.248	\$18,989.357	\$63,434.051	\$80,598.581	\$27,894.841	\$342,649.960
2006	\$422.444	\$16,118.353	\$19,024.056	\$51,297.111	\$29,356.128	\$21,940.983	\$53,312.009	\$20,333.488	\$19,779.060	\$65,658.034	\$85,389.483	\$28,126.020	\$359,460.058
2007	\$358.739	\$16,559.995	\$18,742.800	\$53,571.583	\$31,327.836	\$22,243.747	\$54,158.080	\$21,033.321	\$20,159.318	\$66,574.178	\$88,280.611	\$28,830.601	\$385,269.225
2008	\$331.339	\$18,642.404	\$17,477.865	\$50,115.524	\$32,395.238	\$17,720.286	\$53,686.679	\$20,504.247	\$21,804.722	\$67,836.097	\$91,659.453	\$29,555.318	\$371,613.649
2009	\$310.958	\$20,569.976	\$15,947.173	\$45,488.457	\$28,547.745	\$16,940.713	\$49,146.743	\$18,474.540	\$21,118.733	\$68,921.492	\$88,176.835	\$30,321.354	\$358,476.262
2010	\$332.055	\$20,263.901	\$15,762.313	\$51,068.317	\$30,451.606	\$20,616.710	\$49,992.602	\$19,581.427	\$20,831.296	\$72,281.374	\$90,743.041	\$30,836.122	\$371,692.449
2011	\$262.946	\$22,946.842	\$15,920.515	\$53,207.317	\$32,741.113	\$20,466.204	\$50,735.530	\$20,561.569	\$21,415.375	\$76,005.966	\$94,368.985	\$30,421.949	\$385,846.995
2012	\$311.941	\$28,205.671	\$17,006.381	\$55,915.085	\$34,120.280	\$21,794.806	\$52,967.298	\$22,680.364	\$22,065.835	\$78,462.170	\$98,669.862	\$30,279.977	\$406,564.584
2013	\$319.679	\$32,317.736	\$18,086.313	\$57,423.456	\$35,270.616	\$22,152.840	\$55,589.749	\$23,862.412	\$22,626.521	\$82,993.637	\$103,683.646	\$31,119.629	\$428,022.776
2014	\$328.621	\$36,217.875	\$19,418.411	\$58,983.709	\$36,430.740	\$22,552.969	\$58,856.600	\$25,372.967	\$23,407.060	\$86,526.220	\$110,707.947	\$32,097.338	\$451,916.747
2015	\$336.071	\$35,726.302	\$19,580.357	\$60,856.692	\$37,516.357	\$23,340.335	\$61,173.330	\$26,258.003	\$24,546.854	\$89,300.461	\$115,590.948	\$32,795.613	\$466,164.632
2016	\$343.836	\$36,811.385	\$20,009.434	\$63,690.719	\$39,497.836	\$24,192.883	\$64,066.024	\$27,303.314	\$25,849.489	\$92,156.417	\$121,478.777	\$33,594.249	\$485,303.645
2017	\$350.239	\$39,156.099	\$20,515.420	\$66,611.393	\$41,650.351	\$24,961.042	\$66,959.610	\$28,312.148	\$27,196.688	\$95,073.699	\$127,551.601	\$34,401.236	\$506,128.131
2018	\$357.044	\$42,511.337	\$21,215.160	\$69,509.746	\$43,756.115	\$25,753.631	\$69,872.516	\$29,305.451	\$28,588.288	\$98,051.214	\$133,807.553	\$35,216.249	\$528,434.558
2019	\$363.855	\$46,034.002	\$21,886.400	\$72,497.888	\$45,930.961	\$26,566.927	\$72,800.705	\$30,312.243	\$30,024.003	\$101,087.773	\$140,244.188	\$36,038.949	\$551,290.007
2020	\$370.863	\$48,240.169	\$22,467.775	\$75,554.845	\$48,098.140	\$27,456.704	\$75,602.144	\$31,435.529	\$31,458.771	\$104,607.264	\$146,835.792	\$36,877.154	\$573,450.307
2021	\$377.875	\$50,439.030	\$23,060.032	\$78,720.133	\$50,349.693	\$28,370.440	\$78,462.251	\$32,577.133	\$32,932.443	\$108,210.653	\$153,599.267	\$37,722.695	\$596,101.512
2022	\$384.885	\$52,623.081	\$23,662.335	\$81,996.734	\$52,687.830	\$29,308.904	\$81,379.599	\$33,735.878	\$34,444.162	\$111,897.329	\$160,530.230	\$38,575.190	\$619,229.422
2023	\$391.888	\$54,783.233	\$24,273.682	\$85,387.336	\$55,114.791	\$30,272.544	\$84,352.596	\$34,910.488	\$35,992.942	\$115,666.587	\$167,623.656	\$39,434.243	\$642,816.652
2024	\$398.879	\$56,909.529	\$24,894.365	\$88,894.775	\$57,632.844	\$31,261.931	\$87,379.489	\$36,099.590	\$37,577.660	\$119,517.632	\$174,873.865	\$40,299.445	\$666,845.228
2025	\$405.852	\$58,991.569	\$25,523.353	\$92,521.957	\$60,244.287	\$32,277.670	\$90,458.356	\$37,301.714	\$39,197.060	\$123,449.582	\$182,274.516	\$41,170.367	\$691,294.326
2026	\$412.803	\$61,018.767	\$26,161.077	\$96,271.969	\$62,951.457	\$33,320.512	\$93,587.108	\$38,515.292	\$40,849.746	\$127,461.474	\$189,818.600	\$42,046.569	\$716,143.406
2027	\$419.726	\$62,980.524	\$26,807.123	\$100,147.681	\$65,756.730	\$34,390.951	\$96,763.486	\$39,738.658	\$42,534.193	\$131,552.274	\$197,498.441	\$42,927.596	\$741,369.702
2028	\$426.616	\$64,866.349	\$27,462.883	\$104,152.468	\$68,662.529	\$35,489.940	\$99,985.067	\$40,970.052	\$44,248.737	\$135,720.886	\$205,305.696	\$43,812.977	\$766,951.731
2029	\$433.466	\$66,665.965	\$28,126.459	\$108,289.509	\$71,671.331	\$36,618.178	\$103,249.256	\$42,207.617	\$45,991.586	\$139,966.158	\$213,231.358	\$44,702.230	\$792,863.604
2030	\$440.272	\$68,369.398	\$28,798.824	\$112,562.207	\$74,785.675	\$37,776.533	\$106,553.294	\$43,449.408	\$47,760.817	\$144,286.898	\$221,265.761	\$45,594.857	\$819,081.736
2031	\$447.028	\$69,972.490	\$29,476.307	\$116,974.351	\$78,008.177	\$38,966.174	\$109,894.258	\$44,693.348	\$49,554.375	\$148,681.850	\$229,398.597	\$46,490.346	\$845,582.951
2032	\$453.727	\$71,463.000	\$30,155.197	\$121,529.290	\$81,341.521	\$40,187.769	\$113,269.058	\$45,937.309	\$51,370.094	\$153,149.741	\$237,618.922	\$47,388.176	\$872,334.514
2033	\$460.365	\$72,831.528	\$30,835.140	\$126,231.014	\$84,788.489	\$41,442.525	\$116,674.446	\$47,179.071	\$53,205.682	\$157,689.291	\$245,915.175	\$48,287.810	\$899,309.520
2034	\$466.936	\$74,069.832	\$31,515.719	\$131,083.849	\$88,351.970	\$42,731.879	\$120,107.017	\$48,416.344	\$55,058.734	\$162,299.230	\$254,275.198	\$49,188.701	\$926,481.561
2035	\$473.434	\$75,170.595	\$32,196.472	\$136,091.855	\$92,034.977	\$44,056.878	\$123,563.214	\$49,646.775	\$56,926.736	\$166,978.319	\$262,686.262	\$50,090.289	\$953,823.952
2036	\$479.853	\$76,127.401	\$32,876.893	\$141,259.578	\$95,840.658	\$45,418.920	\$127,039.328	\$50,867.953	\$58,807.074	\$171,725.360	\$271,135.085	\$50,992.005	\$981,310.532
2037	\$486.188	\$76,934.732	\$33,556.446	\$146,592.114	\$99,772.322	\$46,819.792	\$130,531.507	\$52,077.420	\$60,697.036	\$176,539.224	\$279,607.870	\$51,893.269	\$1,008,915.807
2038	\$492.433	\$77,587.990	\$34,234.565	\$152,094.342	\$103,833.456	\$48,260.886	\$134,035.762	\$53,272.681	\$62,593.820	\$181,418.869	\$288,090.334	\$52,793.491	\$1,036,614.289
2039	\$498.583	\$78,083.540	\$34,910.662	\$157,771.891	\$108,027.752	\$49,744.139	\$137,547.972	\$54,451.216	\$64,494.544	\$186,363.365	\$296,567.744	\$53,692.071	\$1,064,381.587
2040	\$504.631	\$78,418.731	\$35,584.128	\$163,630.500	\$112,359.134	\$51,271.366	\$141,063.892	\$55,610.485	\$66,396.250	\$191,371.918	\$305,024.958	\$54,588.401	\$1,092,193.895



## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

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Historical and Projected Values of Employment  
by Major Industrial Classification for North Central Texas Region

## Catalyst!!

### The Role of Dallas/Fort Worth International Airport in the North Central Texas Regional Economy

Year	Agriculture	Mining	Construction	Total Manufacturing	Durable Manufacturing	Nondurable Manufacturing	Trade	Transportation, Warehousing & Utilities	Information	Finance, Insurance & Real Estate	Services	Government	Total All Industries
2001	6.230	14.900	167.231	345.862	243.793	102.069	515.675	145.797	123.395	222.230	1,033.534	346.993	2,921.847
2002	5.595	15.273	157.375	318.798	222.322	96.476	500.433	142.033	110.052	224.719	1,024.788	361.422	2,860.488
2003	5.317	12.532	151.849	302.129	209.587	92.542	482.572	139.168	100.486	224.205	1,030.482	370.062	2,818.802
2004	5.112	13.132	155.624	300.680	209.921	90.759	482.343	140.909	95.498	227.407	1,059.638	374.391	2,854.734
2005	5.716	15.037	161.661	304.719	212.392	92.327	493.434	141.346	94.266	232.343	1,095.410	382.002	2,925.934
2006	5.387	17.868	170.551	307.933	217.519	90.414	506.335	144.737	94.438	243.098	1,154.036	387.650	3,032.033
2007	5.844	21.406	180.378	303.409	214.981	88.428	513.436	149.798	91.630	246.864	1,208.667	393.885	3,115.317
2008	5.917	26.132	184.633	294.410	208.358	86.052	517.326	150.922	90.185	249.697	1,244.547	406.542	3,170.311
2009	6.374	22.734	159.422	268.889	188.662	80.227	490.458	144.726	85.062	241.953	1,218.488	414.770	3,052.876
2010	6.041	23.762	145.028	257.254	179.315	77.939	484.851	141.473	81.686	243.059	1,236.046	423.084	3,042.284
2011	5.892	28.355	144.029	262.421	185.361	77.060	496.555	146.359	81.830	249.539	1,288.647	417.945	3,121.572
2012	5.684	32.885	149.828	265.197	188.234	76.963	511.062	150.575	80.957	258.664	1,339.565	413.211	3,207.628
2013	5.737	35.882	157.169	265.313	188.246	77.067	524.240	154.852	82.305	267.220	1,381.343	419.705	3,293.766
2014	5.786	38.414	166.636	263.981	186.971	77.010	542.876	161.177	83.761	272.358	1,447.439	427.528	3,409.956
2015	5.811	36.329	165.862	262.227	184.144	78.082	552.229	162.894	85.169	275.271	1,483.636	431.367	3,460.794
2016	5.838	36.029	167.280	264.983	185.787	79.196	566.212	165.296	87.004	278.190	1,531.040	436.415	3,538.287
2017	5.842	37.010	169.254	267.839	187.948	79.891	579.552	167.317	88.841	281.051	1,578.907	441.448	3,617.061
2018	5.850	38.901	172.730	270.231	189.786	80.445	592.445	169.138	90.679	283.851	1,627.190	446.465	3,697.480
2019	5.857	40.862	175.862	272.546	191.573	80.973	604.887	170.942	92.515	286.589	1,675.835	451.464	3,777.360
2020	5.866	41.610	178.190	274.617	192.955	81.662	615.749	173.302	94.214	290.443	1,724.520	456.545	3,855.056
2021	5.873	42.345	180.521	276.666	194.321	82.345	626.608	175.655	95.905	294.256	1,773.441	461.606	3,932.876
2022	5.880	43.065	182.856	278.695	195.672	83.023	637.456	178.001	97.584	298.025	1,822.538	466.646	4,010.746
2023	5.884	43.771	185.193	280.702	197.006	83.696	648.286	180.339	99.250	301.747	1,871.749	471.662	4,088.585
2024	5.888	44.461	187.533	282.686	198.324	84.363	659.092	182.668	100.903	305.419	1,921.012	476.654	4,166.315
2025	5.890	45.134	189.873	284.647	199.624	85.023	669.865	184.986	102.539	309.038	1,970.260	481.618	4,243.851
2026	5.891	45.788	192.215	286.584	200.905	85.678	680.599	187.293	104.158	312.602	2,019.429	486.553	4,321.110
2027	5.890	46.423	194.556	288.495	202.169	86.326	691.286	189.586	105.757	316.107	2,068.448	491.458	4,398.006
2028	5.889	47.037	196.896	290.381	203.414	86.968	701.918	191.866	107.336	319.550	2,117.250	496.329	4,474.452
2029	5.885	47.630	199.235	292.241	204.639	87.602	712.487	194.130	108.892	322.929	2,165.762	501.166	4,550.359
2030	5.881	48.200	201.572	294.074	205.844	88.230	722.987	196.378	110.423	326.241	2,213.914	505.966	4,625.637
2031	5.875	48.747	203.906	295.880	207.030	88.850	733.409	198.609	111.929	329.483	2,261.632	510.728	4,700.198
2032	5.868	49.269	206.236	297.657	208.194	89.463	743.746	200.821	113.407	332.652	2,308.843	515.449	4,773.948
2033	5.859	49.767	208.562	299.405	209.337	90.067	753.989	203.013	114.857	335.746	2,355.473	520.127	4,846.797
2034	5.849	50.238	210.883	301.123	210.459	90.664	764.131	205.183	116.275	338.762	2,401.447	524.762	4,918.653
2035	5.838	50.682	213.198	302.811	211.558	91.253	774.164	207.332	117.661	341.697	2,446.691	529.350	4,989.424
2036	5.826	51.098	215.506	304.468	212.636	91.832	784.080	209.457	119.013	344.549	2,491.131	533.889	5,059.017
2037	5.812	51.486	217.807	306.093	213.690	92.404	793.872	211.557	120.330	347.315	2,534.692	538.379	5,127.343
2038	5.797	51.844	220.100	307.687	214.720	92.966	803.531	213.632	121.610	349.994	2,577.300	542.816	5,194.310
2039	5.780	52.173	222.384	309.247	215.727	93.520	813.050	215.679	122.851	352.581	2,618.882	547.200	5,259.829
2040	5.762	52.472	224.658	310.773	216.710	94.063	822.421	217.699	124.053	355.076	2,659.367	551.528	5,323.810