

The Economic and Fiscal Benefits of the North Texas Defense Industry

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Executive Summary

- The North Texas area has been home to major private-sector defense entities since the 1940s, with the industry comprising a significant portion of the area economy. In addition to their crucial role in national defense and global security, these entities also generate substantial economic benefits through their operations, including well-paying jobs and spending across the region.
- The Perryman Group estimates that when multiplier effects are considered, private-sector defense firms generate some **\$35.3 billion** in annual gross product and approximately **264,600** jobs across the North Texas Region. Of this amount, Tarrant County sees the largest effects, with **\$12.8 billion** in annual gross product and **98,800** jobs, followed by Dallas County with **\$9.4 billion** in yearly gross product and almost **66,100** jobs (including multiplier effects).
- Even in the large and diverse North Texas Region economy, these effects are significant. In fact, the total (direct and indirect) impacts comprise **6.3%** of regional private employment. In addition, these jobs pay well. Salaries for related direct and indirect jobs are almost **5%** above the regional average, with direct job salaries being approximately **41%** above the average for the area.
- Business activity generates tax receipts. The Perryman Group estimates that the total increase in economic activity in the region associated with private defense companies generates **annual** tax revenue of **\$1.756 billion** to the State of Texas and **\$1.496 billion** to local entities in the North Texas region.
- The North Texas defense industry is an important component of the regional business complex, leading to jobs for individuals and opportunities for other local businesses. This sector has a long-standing prominence in the region and with, multiple companies planning notable expansions, it is poised to be a vital and growing source of economic activity for decades to come.

Introduction

The North Texas area has been home to major private-sector defense entities for decades, with the industry comprising a significant portion of the area economy. This sector has its origins in the region dating back to the early 1940s, and it has been pivotal in many key manufacturing segments since that time. The largest firms include

The private-sector defense industry generates an estimated 100,000 direct jobs in the Dallas-Fort Worth area and surrounding region.

Lockheed Martin, Bell Textron, RTX (the parent company of Raytheon and Collins Aerospace), L3 Harris, Elbit Systems, Northrop Grumman, Boeing, and BAE Systems, as well as numerous other smaller firms also located throughout the region.

From aircraft production to defense electronics to defense industry supply networks including aircraft systems, missile components, military aviation, and defense contracting, the private-sector defense industry as a whole comprises an estimated 100,000 direct jobs in the Dallas-Fort Worth area and surrounding region.

In addition to their crucial role in national defense and global security, these entities also generate substantial economic benefits through their operations, including well-paying jobs and spending across the region. The Perryman Group (TPG) recently analyzed the economic and fiscal impact of the industry.

North Texas and the Defense Industry

Lockheed Martin has headquarters locations in two cities within the Metroplex area, with Fort Worth being home to the company's Aeronautics Headquarters & Main Plant, including the cutting-edge F-

35 Lightning II program.

Lockheed Martin Missiles and Fire Control Headquarters is located in Grand Prairie, with a focus on defense technology such as missile defense, precision strike weapons, and fire control solutions. Some 20,000

In addition to the presence of large firms, the North Texas Region has developed a deep supply chain network of smaller companies providing input goods and services.

Lockheed Martin employees work in the Fort Worth plant, with thousands more in Grand Prairie and elsewhere across the region. Lockheed Martin is the largest defense employer in North Texas. Expansion potential is significant, including additional munitions and related facilities. Lockheed Martin is investing \$9 billion to expand facilities, tooling, automation, manufacturing technology and the domestic supplier network needed to increase weapons production. Growth is occurring in THAAD, PAC-3 MSE and PrSM missile production, leading to advanced-manufacturing investment, supplier expansion, and demand for a larger skilled workforce. The Grand Prairie location is seeing continued demand for engineers, manufacturing specialists, technicians, machinists, skilled production workers and supply-chain personnel, strengthening North Texas's position as a growing defense-manufacturing workforce center.

Bell Textron employs some 5,000 people at its Global Headquarters and other facilities across Fort Worth, Arlington, and Grand Prairie. Key defense programs include the new MV-75 Long Range Assault Aircraft for the US Army along with the venerable V-22 and H-1 programs. The company is celebrating 75 years of its longstanding footprint in the North Texas defense industry landscape in 2026. Looking ahead, significant potential expansion in the area could occur as several US allies and partners are exploring the MV-75 Cheyenne for their fleets with global applications including NATO/Europe as well as the Indo-Pacific and Arctic regions. Bell Textron is also working with the US

Marine Corps on an MV-75 variant for the Future Attack Strike (FASt) program, while the X-76 is being built for the Defense Advanced Research Project Agency (DARPA) Speed and Runway Independent Technologies (SPRINT) program.

RTX (the parent company of Raytheon Technologies and Collins Aerospace) also has a substantial presence in the region, including the Raytheon Technologies defense electronics campus located in McKinney and multiple Collins Aerospace locations, with a manufacturing and R&D expansion in Richardson.

L3Harris Technologies has large operations throughout the area, including in Arlington, Plano, Greenville, and others, primarily focused on ISR (Intelligence, Surveillance, and Reconnaissance) systems, communications, avionics, electronic warfare, and defense electronics.

Boeing Defense, Space, and Security has a substantial presence in the region. General Dynamics, Northrop Grumman, BAE Systems, and GKN Aerospace are also major employers, along with hundreds of suppliers and engineering firms which support the defense industry in North Texas. The US Army recently awarded Northrop Grumman a \$4.84 billion contract for production of the Common Infrared Countermeasures (CIRCM) system, which protects helicopters from infrared-guided missiles.

Recent announcements indicate that the regional private-sector defense industry continues to grow, with a \$1 billion investment in Lockheed Martin for F-35 production, a new Bell Textron aircraft parts facility, and expansions of suppliers such as MP Materials, which manufactures rare earth magnets (critical components in many technologies including defense aircraft), among others. Governor Abbott officially designated Fort Worth as the aviation and defense capital of Texas in 2025, and continued defense industry growth is expected for the city and the broader North Texas area.

In addition to the presence of large firms, the North Texas Region has developed a deep supply chain network of smaller companies providing key input goods and services.

Even beyond the substantial effects of these private-sector entities, North Texas is also home to the NAS JRB Fort Worth Base, which directly employs over 4,550 individuals as well as other military

personnel and facilities throughout the region. While the economic benefits of the Base and other activities are clearly significant, the current analysis is confined to private-sector firms.

Economic Impacts

Any economic stimulus, whether positive or negative, leads to dynamic responses across the economy. The Perryman Group has developed complex and comprehensive models over the past four decades to

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measure these dynamic responses in order to estimate the total economic effects (not only direct, but also indirect and induced) associated with direct sources of stimulus. These systems have been

used in thousands of analyses throughout the US and numerous other countries in Europe, Asia, North America, and South America.

In this instance, The Perryman Group estimated the total economic benefits of private-sector defense industry firms across North Texas. The tax benefits related to the increase in economic activity were also measured and are presented in a subsequent section of this report.

Results are presented in constant (2026) dollars to eliminate the effects of inflation, unless otherwise noted. Methods used in this analysis are summarized on the following page, with additional detail provided in Appendix A.

Measuring Economic Impacts

Any economic stimulus, whether positive or negative, generates dynamic responses throughout the economy. In this instance, the operations of private-sector defense firms lead to direct activity as well as multiplier effects rippling through the economy.

The Perryman Group's dynamic input-output assessment system (the US Multi-Regional Impact Assessment System) was utilized to measure the total (not only direct, but also indirect and induced) effects. The model was developed by the firm more than 40 years ago and has been consistently maintained and updated since that time. It has been used in hundreds of analyses for clients ranging from major corporations to government agencies. The impact system 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 total economic impacts (including multiplier effects). The submodels used in the current analysis reflect the specific industrial composition and characteristics of each of the counties included in this assessment, as well as the spillover spending of employees living throughout the region.

Total economic effects are quantified for key measures of business activity. Note that these measures are different ways of looking at the same increase in economic activity; they are not additive.

- **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 job-years for multi-year estimates and transitory effects such as construction or FTE jobs for ongoing effects.

Business activity also generates incremental taxes to federal, State, and local governments.

Monetary values were quantified on a constant (2026) basis to eliminate the effects of inflation. See the Appendices for additional information regarding the specific methods and assumptions used in this analysis.

The Perryman Group estimates that when multiplier effects are considered, private-sector defense firms generate some **\$35.3 billion** in

annual gross product and approximately **264,600** jobs across the North Texas Region. Of this amount, Tarrant County sees the largest effects, with **\$12.8 billion** in annual gross product and **98,800** jobs, followed by Dallas County with **\$9.4 billion** in yearly gross product and almost **66,100** jobs (including multiplier effects).

The Perryman Group estimates that when multiplier effects are considered, private-sector defense firms generate some **\$35.3 billion** in annual gross product and approximately **264,600** jobs across the North Texas region.

Other counties across the Region also see notable gains, as indicated in the following table.

The Annual Economic Impact of Private-Sector Defense Operations in the North Texas Region

	Total Expenditures (Billions of 2026 Dollars)	Gross Product (Billions of 2026 Dollars)	Personal Income (Billions of 2026 Dollars)	Employment (Jobs)
Tarrant County	\$25.060	\$12.804	\$8.240	98,817
Dallas County	\$17.387	\$9.379	\$6.029	66,064
Collin County	\$8.871	\$5.003	\$3.198	36,046
Hunt County	\$4.176	\$2.157	\$1.387	16,869
Denton County	\$3.500	\$1.819	\$1.182	14,160
Remainder of Region	\$8.594	\$4.173	\$2.520	32,648
TOTAL	\$67.587	\$35.336	\$22.557	264,603

Note: Based on information provided by private-sector defense industry firms, data obtained from governmental entities, and other public information related to industry employment and The Perryman Group's estimates of related multiplier effects. The North Texas region includes Collin, Dallas, Denton, Ellis, Hood, Hunt, Johnson, Kaufman, Parker, Rockwall, Somervell, Tarrant, and Wise counties. Additional explanation of terms and methods may be found elsewhere in this report and in Appendix A, with results by industry in Appendix B.

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

Even in the large and diverse North Texas Region economy, these effects are significant. In fact, the total (direct and indirect) impacts comprise **6.3%** of regional private employment. In addition, these jobs pay well. Salaries for related direct and indirect jobs are almost **5%** above the regional average, with direct job salaries being approximately **41%** above the average for the area.

As noted, several companies are planning notable expansion projects in the region. Such increases in activity would further enhance the overall economic contributions and benefits of the industry.

Fiscal Effects

Business activity generates tax receipts. For example, the retail sales and hotel occupancy effects of the economic activity measured in this study were quantified. A portion of the retail sales would be taxable,

and receipts to the State and local taxing entities are affected by the direct stimulus. Additional room nights associated with the activity also lead to occupancy tax revenues.

Economic activity also affects property tax values. Higher incomes increase housing demand, leading

to higher taxable values as well as the need for additional houses. Increased retail sales and incomes enhance the need for commercial space such as restaurants, retail outlets, and personal service facilities. These higher property values increase taxes to counties, cities, school districts, and other local taxing entities. These indirect taxes lead to significant incremental receipts to the State and local governmental entities.

The Perryman Group estimates that the total increase in economic activity in the region associated with private defense companies generates **annual** tax revenue of **\$1.756 billion** to the State of Texas and **\$1.496 billion** to local entities in the North Texas region.

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Conclusion

Through fulfilling their essential role in national defense and global security, private-sector defense firms generate substantial economic benefits across the North Texas Region, including over 264,600 jobs.

Through fulfilling their essential role in national defense and global security, private-sector defense firms generate substantial economic and fiscal benefits across the North Texas Region, including over 264,600 jobs and billions in tax receipts to the State and local entities.

The billions of dollars in tax revenue associated with this business activity are also important to the State and local taxing entities and can be used to fund priorities ranging from infrastructure to education to public services. As noted, several companies are planning notable expansion

projects in the region. Such increases in activity would further enhance the overall economic contributions and benefits of the industry.

The North Texas defense industry is an important component of the regional business complex, leading to jobs for individuals and opportunities for other local businesses. This sector has a long-standing prominence in the region and is poised to be a vital source of economic activity for decades to come.

Appendix A: Methods Used

US Multi-Regional Impact Assessment System

The basic modeling technique employed in this study is known as dynamic input-output analysis. This input-output segment of the 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, information related to employment was provided by some of the largest firms, with additional research and economic modeling based on publicly available information and governmental sources used to develop estimates of total direct activity. Data on the residential locations of almost 30,000 workers was used to develop a gravity model which allowed prediction of spending patterns of local employees throughout the region.

Model Simulation

The second major phase of the analysis is the simulation of the input-output system to measure overall economic effects of the direct stimulus provided by the relevant companies. The present study was conducted within the context of the US Multi-Regional Impact Assessment System (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; it has also been peer reviewed on multiple occasions. It is used by 12 cabinet departments, hundreds of governmental entities, and major corporations throughout the world. The submodels used in the current simulations reflects the unique industrial structures of each county in the North Texas Region.

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 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. 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 Center for Community and Economic Research *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 2026 dollars to eliminate the effects of inflation.

Measures of Business Activity

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 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 final aggregates used, **Jobs and Job-Years**, reflect the full-time equivalent jobs generated by an activity. For an economic stimulus expected to endure (such as the ongoing operations of a facility), the Jobs measure is used. It should be noted that, unlike the dollar values described above, Jobs is a "stock" rather than a "flow." In other words, if an area produces \$1 million in output in 2025 and \$1 million in 2026, it is appropriate to say that \$2 million was achieved in the 2025-26 period. If the same area has 100 people working in 2025 and 100 in 2026, it only has 100 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 Job-Years (one person working for one year, though it could be multiple individuals working partial years). This concept is distinct from

Jobs, which anticipates that the relevant positions will be maintained on a continuing basis.

In addition to the economic aggregates, the model fully integrates the specific provisions and rate structures associated with major sources of federal, State, and local revenues on a detailed industrial basis, allowing for the estimation of the **fiscal benefits** associated with the economic stimulus.

US Multi-Regional Econometric Model

Overview

The US Multi-Regional Econometric Model was developed by Dr. M. Ray Perryman, President and CEO of The Perryman Group (TPG), about 40 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 four 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, state, and 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 can be integrated with The Perryman Group's other models and systems to provide dynamic projections.

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 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 the 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 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 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 relevant Consumer Price Indices, which fluctuate 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.

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 US 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 US Multi-Regional 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.

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.

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 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 the 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 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.

Appendix B: Results by Industry

The Annual Economic Impact of Private-Sector Defense Operations in the North Texas Region: Tarrant County

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	+\$0.132 b	+\$0.036 b	+\$0.024 b	+283
Mining	+\$0.140 b	+\$0.031 b	+\$0.015 b	+60
Utilities	+\$0.457 b	+\$0.103 b	+\$0.045 b	+146
Construction	+\$0.368 b	+\$0.196 b	+\$0.161 b	+1,689
Manufacturing	+\$12.513 b	+\$5.956 b	+\$3.805 b	+34,819
Wholesale Trade	+\$0.822 b	+\$0.557 b	+\$0.321 b	+2,721
Retail Trade*	+\$3.010 b	+\$2.227 b	+\$1.290 b	+30,123
Transportation & Warehousing	+\$0.719 b	+\$0.475 b	+\$0.314 b	+3,197
Information	+\$0.354 b	+\$0.219 b	+\$0.094 b	+626
Financial Activities*	+\$2.683 b	+\$0.697 b	+\$0.291 b	+2,254
Business Services	+\$1.861 b	+\$1.145 b	+\$0.934 b	+8,483
Health Services	+\$0.707 b	+\$0.494 b	+\$0.417 b	+5,147
Other Services	+\$1.293 b	+\$0.668 b	+\$0.529 b	+9,269
Total, All Industries	+\$25.060 b	+\$12.804 b	+\$8.240 b	+98,817

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

Notes: Monetary values given in billions of 2026 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

The Annual Economic Impact of Private-Sector Defense Operations in the North Texas Region: Dallas County

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	+\$0.063 b	+\$0.017 b	+\$0.011 b	+136
Mining	+\$0.145 b	+\$0.034 b	+\$0.019 b	+81
Utilities	+\$0.507 b	+\$0.115 b	+\$0.050 b	+163
Construction	+\$0.210 b	+\$0.112 b	+\$0.092 b	+967
Manufacturing	+\$6.913 b	+\$3.779 b	+\$2.313 b	+18,351
Wholesale Trade	+\$0.702 b	+\$0.475 b	+\$0.274 b	+2,322
Retail Trade*	+\$1.793 b	+\$1.328 b	+\$0.769 b	+17,960
Transportation & Warehousing	+\$0.412 b	+\$0.273 b	+\$0.181 b	+1,836
Information	+\$0.366 b	+\$0.226 b	+\$0.096 b	+645
Financial Activities*	+\$2.170 b	+\$0.581 b	+\$0.234 b	+1,819
Business Services	+\$2.880 b	+\$1.734 b	+\$1.414 b	+12,844
Health Services	+\$0.403 b	+\$0.282 b	+\$0.238 b	+2,935
Other Services	+\$0.823 b	+\$0.425 b	+\$0.337 b	+6,005
Total, All Industries	+\$17.387 b	+\$9.379 b	+\$6.029 b	+66,064

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

Notes: Monetary values given in billions of 2026 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

The Annual Economic Impact of Private-Sector Defense Operations in the North Texas Region: Collin County

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	+\$0.096 b	+\$0.026 b	+\$0.017 b	+206
Mining	+\$0.039 b	+\$0.009 b	+\$0.005 b	+23
Utilities	+\$0.166 b	+\$0.037 b	+\$0.016 b	+53
Construction	+\$0.128 b	+\$0.067 b	+\$0.056 b	+582
Manufacturing	+\$3.360 b	+\$2.019 b	+\$1.215 b	+8,823
Wholesale Trade	+\$0.320 b	+\$0.216 b	+\$0.125 b	+1,057
Retail Trade*	+\$1.221 b	+\$0.913 b	+\$0.530 b	+12,205
Transportation & Warehousing	+\$0.115 b	+\$0.078 b	+\$0.052 b	+526
Information	+\$0.133 b	+\$0.082 b	+\$0.035 b	+235
Financial Activities*	+\$1.146 b	+\$0.281 b	+\$0.108 b	+857
Business Services	+\$1.406 b	+\$0.841 b	+\$0.686 b	+6,232
Health Services	+\$0.261 b	+\$0.183 b	+\$0.155 b	+1,905
Other Services	+\$0.481 b	+\$0.249 b	+\$0.197 b	+3,343
Total, All Industries	+\$8.871 b	+\$5.003 b	+\$3.198 b	+36,046

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

Notes: Monetary values given in billions of 2026 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

The Annual Economic Impact of Private-Sector Defense Operations in the North Texas Region: Hunt County

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	+\$0.039 b	+\$0.010 b	+\$0.007 b	+83
Mining	+\$0.001 b	+\$0.000 b	+\$0.000 b	+1
Utilities	+\$0.105 b	+\$0.024 b	+\$0.010 b	+34
Construction	+\$0.060 b	+\$0.032 b	+\$0.026 b	+275
Manufacturing	+\$2.378 b	+\$1.179 b	+\$0.764 b	+6,879
Wholesale Trade	+\$0.079 b	+\$0.053 b	+\$0.031 b	+261
Retail Trade*	+\$0.537 b	+\$0.396 b	+\$0.229 b	+5,378
Transportation & Warehousing	+\$0.141 b	+\$0.093 b	+\$0.061 b	+625
Information	+\$0.041 b	+\$0.025 b	+\$0.011 b	+72
Financial Activities*	+\$0.359 b	+\$0.087 b	+\$0.036 b	+270
Business Services	+\$0.111 b	+\$0.068 b	+\$0.056 b	+505
Health Services	+\$0.113 b	+\$0.079 b	+\$0.067 b	+821
Other Services	+\$0.212 b	+\$0.110 b	+\$0.089 b	+1,665
Total, All Industries	+\$4.176 b	+\$2.157 b	+\$1.387 b	+16,869

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

Notes: Monetary values given in billions of 2026 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

The Annual Economic Impact of Private-Sector Defense Operations in the North Texas Region: Denton County

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	+\$0.055 b	+\$0.015 b	+\$0.010 b	+118
Mining	+\$0.002 b	+\$0.000 b	+\$0.000 b	+0
Utilities	+\$0.128 b	+\$0.029 b	+\$0.013 b	+41
Construction	+\$0.060 b	+\$0.032 b	+\$0.026 b	+275
Manufacturing	+\$1.126 b	+\$0.550 b	+\$0.333 b	+2,743
Wholesale Trade	+\$0.136 b	+\$0.092 b	+\$0.053 b	+448
Retail Trade*	+\$0.490 b	+\$0.366 b	+\$0.212 b	+4,896
Transportation & Warehousing	+\$0.058 b	+\$0.039 b	+\$0.026 b	+261
Information	+\$0.079 b	+\$0.049 b	+\$0.021 b	+140
Financial Activities*	+\$0.418 b	+\$0.092 b	+\$0.034 b	+256
Business Services	+\$0.632 b	+\$0.373 b	+\$0.304 b	+2,763
Health Services	+\$0.113 b	+\$0.079 b	+\$0.067 b	+828
Other Services	+\$0.204 b	+\$0.104 b	+\$0.083 b	+1,391
Total, All Industries	+\$3.500 b	+\$1.819 b	+\$1.182 b	+14,160

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

Notes: Monetary values given in billions of 2026 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

The Annual Economic Impact of Private-Sector Defense Operations in the North Texas Region: Remainder of the North Texas Region

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	+\$0.013 b	+\$0.004 b	+\$0.003 b	+31
Mining	+\$0.137 b	+\$0.033 b	+\$0.019 b	+92
Utilities	+\$0.559 b	+\$0.127 b	+\$0.055 b	+179
Construction	+\$0.100 b	+\$0.051 b	+\$0.042 b	+444
Manufacturing	+\$2.065 b	+\$0.899 b	+\$0.533 b	+5,584
Wholesale Trade	+\$0.426 b	+\$0.288 b	+\$0.166 b	+1,410
Retail Trade*	+\$1.319 b	+\$0.989 b	+\$0.575 b	+13,166
Transportation & Warehousing	+\$0.427 b	+\$0.287 b	+\$0.190 b	+1,934
Information	+\$0.396 b	+\$0.244 b	+\$0.104 b	+698
Financial Activities*	+\$1.802 b	+\$0.444 b	+\$0.179 b	+1,383
Business Services	+\$0.710 b	+\$0.440 b	+\$0.359 b	+3,262
Health Services	+\$0.165 b	+\$0.118 b	+\$0.100 b	+1,233
Other Services	+\$0.474 b	+\$0.248 b	+\$0.194 b	+3,233
Total, All Industries	+\$8.594 b	+\$4.173 b	+\$2.520 b	+32,648

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

Notes: Monetary values given in billions of 2026 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

The Annual Economic Impact of Private-Sector Defense Operations in the North Texas Region: Total North Texas Region

Results by Industry

Industry	Total Expenditures	Gross Product	Personal Income	Jobs
Agriculture	+\$0.399 b	+\$0.108 b	+\$0.072 b	+857
Mining	+\$0.464 b	+\$0.108 b	+\$0.058 b	+256
Utilities	+\$1.921 b	+\$0.435 b	+\$0.190 b	+616
Construction	+\$0.926 b	+\$0.490 b	+\$0.404 b	+4,233
Manufacturing	+\$28.356 b	+\$14.381 b	+\$8.964 b	+77,199
Wholesale Trade	+\$2.484 b	+\$1.682 b	+\$0.970 b	+8,220
Retail Trade*	+\$8.370 b	+\$6.219 b	+\$3.605 b	+83,727
Transportation & Warehousing	+\$1.871 b	+\$1.245 b	+\$0.824 b	+8,379
Information	+\$1.369 b	+\$0.846 b	+\$0.361 b	+2,415
Financial Activities*	+\$8.578 b	+\$2.181 b	+\$0.882 b	+6,837
Business Services	+\$7.602 b	+\$4.601 b	+\$3.753 b	+34,088
Health Services	+\$1.762 b	+\$1.234 b	+\$1.044 b	+12,869
Other Services	+\$3.487 b	+\$1.805 b	+\$1.429 b	+24,906
Total, All Industries	+\$67.587 b	+\$35.336 b	+\$22.557 b	+264,603

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

Notes: Monetary values given in billions of 2026 US dollars per year. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.