



The Perryman Group

COVID-19 Pandemic Could Cost Tens of Thousands of Job-Years in Texas' Largest Metro Areas

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Measures taken to “flatten the curve” of the coronavirus and prevent a major spike in infections have caused a strong shock to the economy. As noted in recent reports by The Perryman Group related to COVID-19’s impact on the US economy and the 10 most populous states, many factors will determine the ultimate effects of the coronavirus on the economy, most of which are highly uncertain at present.

The Perryman Group developed a plausible scenario for estimating the ultimate effects of the coronavirus based on a variety of public and private source materials (further described in the US report available at perrymangroup.com). The Perryman Group estimates that the COVID-19 pandemic could cost the US economy approximately \$972.6 billion in real gross product and 11.4 million job-years (a job-year is the equivalent of one person working for a year, though it could be multiple individuals working partial years).

For Texas, The Perryman Group estimates that the cost of COVID-19 and the associated disruptions in the oil market is almost \$101

billion in real gross product and 1.0 million job-years. Communities across the state and nation are feeling negative effects. The Perryman Group estimated the potential costs of COVID-19 for the state’s most populous metropolitan areas. Projected job losses in Austin-Round Rock-Georgetown total almost 77,400 job-years, with over 282,500 in Dallas-Fort Worth-Arlington, nearly 256,000 in Houston-The Woodlands-Sugar Land, and about 81,300 in San Antonio-New Braunfels.

Note that jobs are reported on an annual basis; thus, many more individuals are likely to be affected for a portion of the year. More detailed results by industry are provided on the following pages. Although the situation is changing rapidly and the ultimate outcomes will undoubtedly vary from these estimates, they provide a guideline for planning and expectations.

The physical wellbeing of the population is of paramount concern, yet the economic consequences must also be aggressively addressed as they too involve substantial human costs.

A Representative Illustration of the Potential Overall Impact of the COVID-19 Pandemic on Business Activity in the State of Texas

Texas Region	Real Total Expenditures	Real Gross Product	Real Personal Income	Job-Years
Austin-Round Rock-Georgetown MSA	-\$13.186 b	-\$6.398 b	-\$3.843 b	-77,370
Dallas-Fort Worth-Arlington MSA	-\$57.395 b	-\$25.846 b	-\$15.376 b	-282,520
Houston-The Woodlands-Sugar Land MSA	-\$75.614 b	-\$27.385 b	-\$15.879 b	-255,953
San Antonio-New Braunfels MSA	-\$14.941 b	-\$6.739 b	-\$4.010 b	-81,281
Remaining Regions	-\$99.619 b	-\$34.621 b	-\$19.880 b	-330,845
State of Texas	-\$260.755 b	-\$100.989 b	-\$58.987 b	-1,027,969

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

Notes: Monetary values given in billions of 2012 US dollars. Components may not sum due to rounding.

A Representative Illustration of the Potential Overall Impact of the COVID-19 Pandemic on Business Activity in the Austin-Round Rock-Georgetown MSA

Industry Sector	Real Total Expenditures	Real Gross Product	Real Personal Income	Job-Years
Agriculture	-\$0.070 b	-\$0.017 b	-\$0.011 b	-182
Mining	-\$0.837 b	-\$0.217 b	-\$0.121 b	-969
Utilities	-\$0.360 b	-\$0.083 b	-\$0.036 b	-153
Construction	-\$0.685 b	-\$0.336 b	-\$0.277 b	-3,907
Manufacturing	-\$2.571 b	-\$0.955 b	-\$0.561 b	-7,099
Wholesale Trade	-\$1.098 b	-\$0.743 b	-\$0.428 b	-4,789
Retail Trade*	-\$2.672 b	-\$1.815 b	-\$1.022 b	-36,506
Transportation & Warehousing	-\$0.381 b	-\$0.237 b	-\$0.157 b	-2,166
Information	-\$0.295 b	-\$0.178 b	-\$0.076 b	-673
Financial Activities*	-\$1.768 b	-\$0.546 b	-\$0.210 b	-2,106
Business Services	-\$0.680 b	-\$0.405 b	-\$0.330 b	-4,015
Health Services	+\$0.134 b	+\$0.083 b	+\$0.070 b	+1,164
Other Services	-\$1.906 b	-\$0.951 b	-\$0.684 b	-15,969
Total, All Industries	-\$13.186 b	-\$6.398 b	-\$3.843 b	-77,370

A Representative Illustration of the Potential Overall Impact of the COVID-19 Pandemic on Business Activity in the Dallas-Fort Worth-Arlington MSA

Industry Sector	Real Total Expenditures	Real Gross Product	Real Personal Income	Job-Years
Agriculture	-\$0.207 b	-\$0.051 b	-\$0.034 b	-545
Mining	-\$7.633 b	-\$1.924 b	-\$1.043 b	-8,224
Utilities	-\$1.389 b	-\$0.319 b	-\$0.139 b	-590
Construction	-\$2.234 b	-\$1.096 b	-\$0.903 b	-12,731
Manufacturing	-\$13.838 b	-\$4.520 b	-\$2.628 b	-37,186
Wholesale Trade	-\$4.263 b	-\$2.885 b	-\$1.663 b	-18,599
Retail Trade*	-\$8.476 b	-\$5.843 b	-\$3.306 b	-115,428
Transportation & Warehousing	-\$3.872 b	-\$2.409 b	-\$1.594 b	-22,025
Information	-\$0.994 b	-\$0.601 b	-\$0.257 b	-2,270
Financial Activities*	-\$7.374 b	-\$2.474 b	-\$1.034 b	-10,365
Business Services	-\$2.277 b	-\$1.355 b	-\$1.106 b	-13,452
Health Services	+\$0.546 b	+\$0.339 b	+\$0.287 b	+4,737
Other Services	-\$5.386 b	-\$2.707 b	-\$1.956 b	-45,844
Total, All Industries	-\$57.395 b	-\$25.846 b	-\$15.376 b	-282,520

A Representative Illustration of the Potential Overall Impact of the COVID-19 Pandemic on Business Activity in the Houston-The Woodlands-Sugar Land MSA

Industry Sector	Real Total Expenditures	Real Gross Product	Real Personal Income	Job-Years
Agriculture	-\$0.175 b	-\$0.046 b	-\$0.030 b	-468
Mining	-\$30.777 b	-\$7.706 b	-\$4.143 b	-32,542
Utilities	-\$2.636 b	-\$0.605 b	-\$0.264 b	-1,119
Construction	-\$2.502 b	-\$1.227 b	-\$1.011 b	-14,258
Manufacturing	-\$14.860 b	-\$4.054 b	-\$2.239 b	-27,290
Wholesale Trade	-\$3.588 b	-\$2.428 b	-\$1.400 b	-15,653
Retail Trade*	-\$7.251 b	-\$4.976 b	-\$2.811 b	-98,854
Transportation & Warehousing	-\$2.579 b	-\$1.605 b	-\$1.061 b	-14,669
Information	-\$0.346 b	-\$0.210 b	-\$0.089 b	-791
Financial Activities*	-\$5.048 b	-\$1.472 b	-\$0.530 b	-5,223
Business Services	-\$1.853 b	-\$1.103 b	-\$0.900 b	-10,949
Health Services	+\$0.453 b	+\$0.281 b	+\$0.238 b	+3,927
Other Services	-\$4.453 b	-\$2.235 b	-\$1.637 b	-38,066
Total, All Industries	-\$75.614 b	-\$27.385 b	-\$15.879 b	-255,953

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

Notes: Monetary values given in billions of 2012 US dollars. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

A Representative Illustration of the Potential Overall Impact of the COVID-19 Pandemic on Business Activity in the San Antonio-New Braunfels MSA

Industry Sector	Real Total Expenditures	Real Gross Product	Real Personal Income	Job-Years
Agriculture	-\$0.110 b	-\$0.028 b	-\$0.018 b	-293
Mining	-\$2.304 b	-\$0.586 b	-\$0.321 b	-2,543
Utilities	-\$0.174 b	-\$0.040 b	-\$0.017 b	-74
Construction	-\$0.612 b	-\$0.300 b	-\$0.247 b	-3,486
Manufacturing	-\$2.952 b	-\$0.891 b	-\$0.513 b	-7,682
Wholesale Trade	-\$0.781 b	-\$0.529 b	-\$0.305 b	-3,410
Retail Trade*	-\$2.803 b	-\$1.913 b	-\$1.079 b	-38,252
Transportation & Warehousing	-\$0.626 b	-\$0.390 b	-\$0.258 b	-3,563
Information	-\$0.280 b	-\$0.169 b	-\$0.072 b	-639
Financial Activities*	-\$1.995 b	-\$0.725 b	-\$0.325 b	-3,386
Business Services	-\$0.524 b	-\$0.312 b	-\$0.254 b	-3,095
Health Services	+\$0.190 b	+\$0.118 b	+\$0.100 b	+1,648
Other Services	-\$1.970 b	-\$0.975 b	-\$0.699 b	-16,506
Total, All Industries	-\$14.941 b	-\$6.739 b	-\$4.010 b	-81,281

A Representative Illustration of the Potential Overall Impact of the COVID-19 Pandemic on Business Activity in the Remaining Texas Regions

Industry Sector	Real Total Expenditures	Real Gross Product	Real Personal Income	Job-Years
Agriculture	-\$2.754 b	-\$0.716 b	-\$0.466 b	-7,361
Mining	-\$43.633 b	-\$11.017 b	-\$5.980 b	-47,211
Utilities	-\$3.722 b	-\$0.855 b	-\$0.373 b	-1,580
Construction	-\$2.666 b	-\$1.308 b	-\$1.078 b	-15,198
Manufacturing	-\$20.336 b	-\$5.699 b	-\$3.123 b	-45,578
Wholesale Trade	-\$2.713 b	-\$1.836 b	-\$1.059 b	-11,839
Retail Trade*	-\$9.811 b	-\$6.764 b	-\$3.827 b	-133,616
Transportation & Warehousing	-\$2.936 b	-\$1.827 b	-\$1.208 b	-16,697
Information	-\$0.421 b	-\$0.255 b	-\$0.109 b	-961
Financial Activities*	-\$4.975 b	-\$1.509 b	-\$0.569 b	-5,621
Business Services	-\$1.310 b	-\$0.780 b	-\$0.636 b	-7,743
Health Services	+\$0.752 b	+\$0.468 b	+\$0.395 b	+6,529
Other Services	-\$5.094 b	-\$2.523 b	-\$1.847 b	-43,969
Total, All Industries	-\$99.619 b	-\$34.621 b	-\$19.880 b	-330,845

A Representative Illustration of the Potential Overall Impact of the COVID-19 Pandemic on Business Activity in the State of Texas

Industry Sector	Real Total Expenditures	Real Gross Product	Real Personal Income	Job-Years
Agriculture	-\$3.314 b	-\$0.858 b	-\$0.560 b	-8,848
Mining	-\$85.183 b	-\$21.450 b	-\$11.607 b	-91,489
Utilities	-\$8.281 b	-\$1.902 b	-\$0.830 b	-3,515
Construction	-\$8.699 b	-\$4.267 b	-\$3.516 b	-49,579
Manufacturing	-\$54.557 b	-\$16.118 b	-\$9.063 b	-124,835
Wholesale Trade	-\$12.443 b	-\$8.420 b	-\$4.855 b	-54,289
Retail Trade*	-\$31.013 b	-\$21.311 b	-\$12.046 b	-422,656
Transportation & Warehousing	-\$10.394 b	-\$6.468 b	-\$4.277 b	-59,119
Information	-\$2.335 b	-\$1.413 b	-\$0.603 b	-5,334
Financial Activities*	-\$21.159 b	-\$6.725 b	-\$2.669 b	-26,702
Business Services	-\$6.644 b	-\$3.955 b	-\$3.226 b	-39,253
Health Services	+\$2.075 b	+\$1.289 b	+\$1.090 b	+18,005
Other Services	-\$18.809 b	-\$9.392 b	-\$6.824 b	-160,353
Total, All Industries	-\$260.755 b	-\$100.989 b	-\$58.987 b	-1,027,969

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

Notes: Monetary values given in billions of 2012 US dollars. Components may not sum due to rounding. Retail Trade includes Restaurants, Financial Activities includes Real Estate.

METHODS AND ASSUMPTIONS

The Perryman Group's scenario for the effects of COVID-19 reflects a variety of public and private source materials including, among others, data from sectors that have been particularly affected, information from areas where the pandemic spread earlier (as well as prior pandemics and natural disasters), performance patterns in other economic downturns and recoveries, and historical responses to oil price fluctuations. Reasonable measures of potential direct effects by detailed industrial category were developed through this process. These direct

effects were then used as inputs to The Perryman Group's dynamic and integrated econometric and impact assessment systems to determine total economic costs of COVID-19 as various sectors interact throughout the Texas economy and its various regions. Allocations to metropolitan areas (MSAs) were developed based on the unique industrial structure of the area economy.

The US Multi-Regional Impact Assessment System and the US Multi-Regional Econometric Model are integrated in this dynamic analysis. These systems have been developed,

maintained, and expanded by TPG over the past four decades. They have been used in thousands of applications, including numerous crisis situations (including several natural disasters), major health care issues (such as cancer and diabetes), pressing social concerns (such as hunger, child maltreatment, homelessness, and indigent health care), and substantial disruptions in global energy markets. The approach facilitates evaluation of extensive detail across hundreds of industrial sectors.

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M. RAY PERRYMAN, PH.D.


Dr. Perryman is the President and CEO of the Perryman Group and Distinguished Professor of Economic Theory and Method at the International Institute for Advanced Studies. Over the past 40 years, Dr. Perryman has helped recruit corporations providing tens of thousands of jobs through economic development work, resolved billion-dollar legal issues, and revamped public policy through impact assessments and other studies. His firm has measured economic impacts for corporate locations and expansions involving billions in investments, and his economic forecasts are used by corporations and government agencies alike.





He has provided economic analysis and expert testimony for civil litigation across a wide range of practice areas including antitrust and competition, intellectual property disputes, securities, and commercial and complex litigation. His work combines strong expertise in economic damages calculation, asset valuation, market analysis, and statistical methods and econometrics.

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