



The Perryman Group | July 2024

# Hurricane Beryl Causes Estimated \$2 Billion Net Loss in Texas Output

Hurricane Beryl made landfall in the Houston area on July 8 as a Category 1 storm. Sustained winds of up to 80 miles per hour and rainfall of up to eight inches across the metropolitan area caused significant damage. Flooding, downed trees, power outages, and structural damage were extensive, with preliminary estimates of \$1.5 billion in Texas and \$2.5 billion across the United States. The storm had weakened compared to the Category 4 and 5 levels reached as it caused massive destruction in the Caribbean. The Yucatan Peninsula and northern Venezuela were also affected.

The loss of life and human suffering is of paramount importance and should be the primary concern, as well as enormous emotional losses. Long-lasting power outages compound the difficulties, particularly given the summer heat.

Damages are only a part of the economic implications of the hurricane. Any economic stimulus, whether positive or negative, leads to additional responses and multiple rounds of business activity. Business operations have been interrupted, causing lost revenue and profits even beyond the damage to facilities. In many cases, these revenues cannot be recouped. Productivity has also been affected as workers are either absent due to problems with their homes and property or less effective on the job as they deal with those issues.

On the other hand, the act of repairing buildings and infrastructure damaged by wind and water leads to an increase in spending in the construction sector. Suppliers of the goods and services needed to get things back to normal will see additional opportunities due to Beryl. Replacing personal items, vehicles, furniture, and everything else will increase retail activity in the region. These benefits partially offset the overall losses.

Based on the modeling system that we have developed over the past 40 years and used to assess numerous natural disasters and current property damage estimates, when multiplier effects and the various positive and negative aspects of the economics of the storm are considered, the net impact of Hurricane Beryl could lead to economic losses (which would be observed over an extended period of time) including **\$4.6 billion** in total expenditures, **\$2.0 billion** in gross product, and **\$1.3 billion** in earnings in Texas. For the United States, losses could total about **\$7.0 billion** in total expenditures, **\$3.0 billion** in gross product, and **\$2.0 billion** in earnings (including effects within Texas as well as spillover to other areas).

In addition to the enormous human costs, Hurricane Beryl will have a significant net negative impact on the economy. However, the area will recover over time and likely resume its prior pattern of expansion in the future.

## Preliminary Estimate of Economic Harm from Hurricane Beryl

Region	Total Expenditures	Gross Product	Earnings
Texas	\$4.636 b	\$2.017 b	\$1.334 b
United States	\$6.964 b	\$3.029 b	\$2.004 b

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

**Notes:** Based on preliminary damage estimates and The Perryman Group's measurement of associated multiplier effects which will occur across the economy over time. Monetary values given in billions of 2024 dollars.

## METHODS AND ASSUMPTIONS

In order to offer an early perspective on potential losses, The Perryman Group's US Multi-Regional Impact Assessment System and econometric models were used to measure the dynamic effects of Hurricane Beryl on the economy based on the most current preliminary estimates of damages and losses. The Impact Assessment System essentially measures the economic responses to a stimulus; in other words, it counts the successive rounds of business activity set off by the initial activity (in this case, the hurricane). The system has been in use for more than 40 years (with updates and refinements) and has

been utilized on hundreds of occasions by clients ranging from large government agencies to private sector firms; it has also been peer reviewed. In this analysis, estimated property losses were translated into likely long-term losses in business activity (including the offsetting net effects of the subsequent rebuilding activity and the best information available regarding insurance coverage) using techniques previously developed by Dr. M. Ray Perryman, founder and president of the firm, and used in the assessment of prior storms (including Hurricanes Ike, Rita, Katrina, Harvey, Maria, Florence, Irma, Ida, Ian, and others).

Total expenditures (or total spending) measures the volume of dollars changing hands as a result of the economic stimulus. Gross product (or output) is production of goods and services lost in the area as a result of the hurricane; this measure is parallel to the gross domestic product numbers commonly reported by various media outlets and is a subset of total expenditures. Earnings are dollars that end up in the hands of people in the area; the vast majority of this aggregate derives from earnings associated with employment.

## THE PERRYMAN GROUP



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Dr. Perryman addresses dozens of audiences throughout the world every year, catering to a wide variety of events.

### 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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