Spring 3-1-2021

The Economic Impact of COVID-19 in Tyler

Manuel Reyes-Loya
University of Texas at Tyler, hibbsinstitute@uttyler.edu

The University of Texas at TYLER Soules College of Business

Hibbs Brief

Hibbs Institute for Business & Economic Research

The Economic Impact of COVID-19 in Tyler

Manuel Reyes, D.E.D.

In this issue of the ***Hibbs Brief***, we discuss the economic impact of COVID-19 in Tyler during 2020, using recently released figures on Gross Domestic Product (GDP) as a measure of economic performance.

After over 18 months since the first case of COVID-19 reported in the United States on January 20, the pandemic has affected the entire nation and has changed people's lives. The outbreak became a public health emergency, leading to contingency measures all over the country. These measures ranged from encouraging hygiene practices, such as covering the mouth when sneezing and coughing or continuously cleaning hands and surfaces, to restraining social and business activities involving large amounts of people or even shutting down businesses for several weeks.

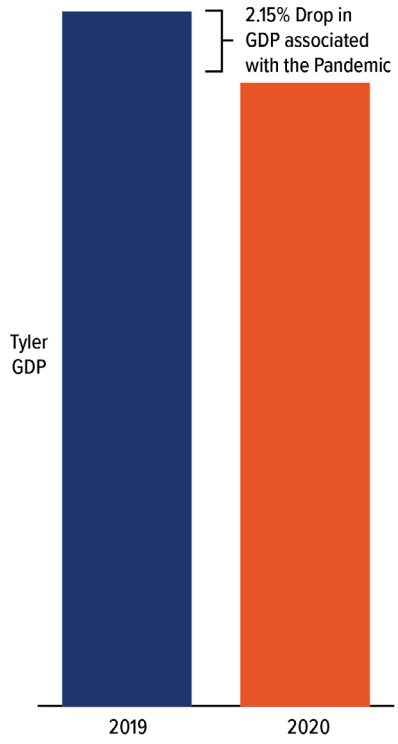
The pandemic has impacted states and cities unevenly during these past months. It has reached different levels of severity, both health-wise and economy-wise, at different times. Also, the effects were different among individuals. While, in general, older people were more prone to develop symptoms or require medical aid, younger people were frequently asymptomatic. Similarly, the effects differed widely among industries, economic activities and occupations. For instance, some service industries, such as food service, accommodation, personal care or entertainment experienced substantial economic losses for several weeks or months. As a result, these more vulnerable industries depicted (most of the time) the higher number of layoffs and longer periods to recover and re-hire.

In the economic realm, probably the most common indicator used to measure a region's performance is the Gross Domestic Product (GDP). The GDP is the total value of everything that is produced in a region, namely, a country, a state, a city, a Metropolitan Statistical Area (MSA), etc.[1] Official GDP estimates are developed by the U.S. Bureau of Economic Analysis (BEA) and are gradually released during the following months from a larger to a smaller jurisdiction; while country estimates for year 2020 were released in January 2021, estimates for metro areas and counties will be released in December 2021. In the meantime, renowned economic consulting firms conduct their own estimates, which are periodically released during the year. For instance, Chmura Economics and Analytics recently released their own estimates on GDP figures by county and metro areas.[2]

With the objective of measuring the resistance of Tyler's overall economy in the hard times experienced during the pandemic, the ***Hibbs Institute*** has estimated the economic impact of COVID-19 in Tyler in 2020. We used the GDP figures produced by Chmura Economics as a starting point and then estimated the economic impact in three straightforward steps with their corresponding assumptions.

First, we had to do some "cleaning" to the GDP figures. Since Tyler (as many local economies in Texas) experienced two simultaneous shocks in 2020, the COVID-19 pandemic and a substantial drop in oil prices, we removed the GDP portion associated with oil-related industries to have only one shock affecting our numbers.[3] We identified 11 different, six-digit oil-related industries[4] (using the NAICS[5] code) in Tyler and subtracted those industries' corresponding dollar value for 2019 and 2020 from the original GDP values, respectively.

Figure 1. Gross Domestic Product Drop Associated with COVID-19 Pandemic in Tyler



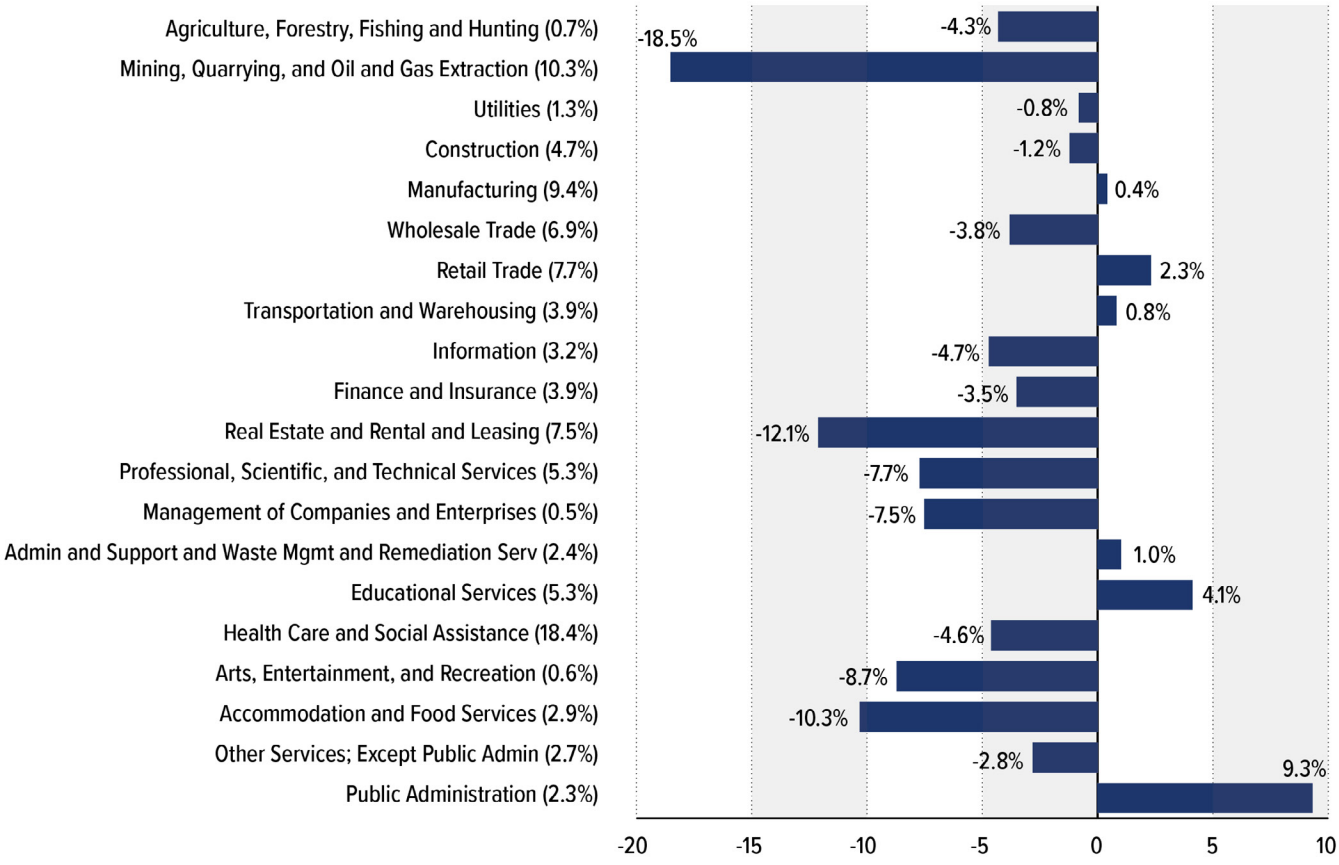
Source: GDP Figures collected from JobsEQ by Chmura Economics and Analytics; calculations made by the Hibbs Institute.

Second, we estimated the indirect and induced effects in dollar value (related to suppliers and employees) derived from the 11 oil-related industries for 2019 and 2020 and also removed them from the original corresponding GDP values. Third, we calculated the difference between the resulting differences for 2019 and 2020 (after deducting oil-related activities and their indirect/induced effects). The result is divided by the original GDP figure for 2019, which represents the percent change between 2019 and 2020.

The calculated number is $242.2 million, which represents the estimated drop of the local economy associated with COVID-19 (once the oil-related industries are excluded). See **Figure 1**. The $242.2 million drop is equivalent to 2.15% of the Tyler's economy in 2019 ($11.26 billion).

The COVID-19 recession widely impacted the different sectors of the economy. In general, those sectors that depend on the movement of people were severely affected, while those sectors that depend on the movement of information were relatively unscathed.[6] Thus, the economic impact of the community was greatly determined by the composition of its economy and the interaction among its industry sectors in Tyler. **Figure 2** depicts the detail of the 20 NAICS industry sectors. In parethesis we provide the share of each industry to the overall local economy. A pronounced drop in an industry with high percent share would result in a larger loss to the economy.

Figure 2. Gross Domestic Product Percent Change in Tyler Between 2019 and 2020 by NAICS Industry Sector



Source: JobsEQ by Chmura Economics and Analytics.

[1] An explanation regarding the Gross Domestic Product and some of its applications is provided in a past issue of the Hibbs Brief, "A Simple Explanation of Gross Domestic Product with Tyler's Output as an Example." https://www.uttyler.edu/hibbs-institute/files/briefs/2019/hibbs-brief-a-simple-explanation-of-gross-domestic-product.pdf

[2] Chmura Economics and Analytics is a consulting firm committed to guiding their clients with thorough, accurate and useful data and analysis that facilitate regional economies to make informed decisions and grow their communities. https://www.chmura.com/about-us

[3] We believe that oil-related industries followed different and unique dynamics in 2020. Thus, we excluded several oil-related industries with the intention of removing the noise it could generate to our estimates.

[4] The oil-related industries excluded from the calculated GDP were: Oil Extraction (211120), Gas Extraction (211130), Drilling Oil and Gas Wells (213111), Support Activities for Oil and Gas Operations (213112), Petroleum Refineries (324110), Petroleum Lubricating Oil and Grease Manufacturing (324191), Petroleum Bulk Stations and Terminals (424710), Petroleum and Petroleum Products Merchant Wholesaler (424720), Pipeline Transportation of Crude Oil (486110), Pipeline Transportation of Natural Gas (486210) and Pipeline Transportation of Refined Petroleum Products (486910).

[5] The North American Industry Classification System (NAICS) is the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. U.S. Census Bureau. https://www.census.gov/naics/?99967

[6] The Brookins Institution (2021); "Explaining the Economic Impact of COVID-19: Core Industries and the Hispanic Workforce," Policy Briefs and Reports. https://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=1001&context=brookings_policybriefs_reports