**Effect of Expanded Unemployment Benefits on Unemployment in Texas after lift of COVID restrictions**

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INTRODUCTION

On March 2, 2021, Texas State governor, Greg Abbot, issued a decisive executive order to open the state locked down due to the COVID-19 pandemic. Activities resumed in the state but with slow return to work even with COVID restrictions lifted. Some business owners complained that they’re struggling to fill jobs, since the opening of the state, arguing this to be as a result of unemployed Texans making more money on expanded unemployment benefits provided by the state and Federal government. This argument triggered Governor Abbot’s ending of expanded unemployment benefits on June 26, 2021, to encourage the totally and partially insured unemployed Texans claiming benefits under the programs to fully return to work. This project’s aim is to show the relationship between the state’s unemployment rate and pandemic unemployment claims before and after the lift of COVID restrictions in March 2021.

EXPANDED UNEMPLOYMENT INUSRANCE PROGRAMS DUE TO THE PANDEMIC

The Coronavirus Aid, Relief and Economic Security Act (CARES), signed into law on March 27, 2020, provided $268 billion for expanded unemployment insurance benefits provided through three programs, the Federal Pandemic Unemployment Compensation (FPUC), the Pandemic Unemployment Assistance (PUA) and the Pandemic Extended Unemployment Compensation (PEUC). For a clear understanding of each of the different programs, a reference is made to Bea.gov, an official website of the United States government, where the three programs are explained as follows:

* The Federal Pandemic Unemployment Compensation (PUC) provided weekly supplemental benefits of $600 for people that received unemployment benefits for weeks of unemployment between April 5, 2020, and July 31, 2020.
* The Pandemic Unemployment Assistance (PUA) program temporarily provided unemployment benefits to people unable to work for reasons related to COVID-19 who were not usually eligible for unemployment assistance, including the self-employed, independent contractors, and those with limited work. This program paid for up to 39 weeks of unemployment benefits between January 27, 2020 and December 31, 2020.
* The Pandemic Emergency Unemployment Compensation (PEUC) program provided an additional 13 weeks of unemployment benefits to people who had exhausted all available regular and extended unemployment benefits through December 31, 2020.

The website also explained further extension of these programs with the Coronavirus Response and Relief Supplemental Appropriations Act of 2021, signed into law on December 27, 2020. This Act included an 11-week extension of unemployment insurance (UI) benefits that were provided in then CARES Act that were set to expire in December 2020. This extension provided an additional $300 per week supplement to state UI compensation under the FPUC program (half of what was paid in the program under the CARES Act) and also lengthened the PUA and PEUC programs to September 6, 2021, but some states including Texas decided to cut off the extended benefits before the official cut-off date. Part B of this research paper, at a later would aim at showing the effect of the end of federal pandemic unemployment benefits on the lone star state’s unemployment level. This first part of the research would focus on showing the relationship between the state’s employment rate and pandemic unemployment claims before and after the lift of COVID restrictions in March 2021.

DATASET PREPARATION AND ANALYSIS

R packages were used to prepare and analyze constructed dataset for this research. Data was sourced from the Federal Reserve of Economic Data [FRED](https://fred.stlouisfed.org/) and the Bureau of Labor Statistics [BLS](https://data.bls.gov/pdq/SurveyOutputServlet). The state’s Unemployment Initial and Continued Claims, Pandemic Emergency Unemployment Compensation claims (PEUCC), Pandemic Unemployment Assistance Initial Claims (PUAIC), Pandemic Unemployment Assistance Continued Claims (PUACC) and Insured Unemployment Rates was sourced from [FRED](https://fred.stlouisfed.org/) while it’s Unemployment Statistics was sourced from [BLS](https://data.bls.gov/pdq/SurveyOutputServlet). Period of data collected was from 2020 to 2021. The unemployment insurance claims datasets showed numbers of claims filed under the various programs by weeks ending Saturday from March 2020 to June 2021. The 7 claims datasets were joined into a dataset to show 77 observations and 9 variables with week\_ending as the only categorical variable. Rows of the joined dataset were aggregated to show claims’ numerical values by month. The aggregated claims dataset and the Unemployment Statistics dataset were merged into the final dataset with excel spreadsheet format as shown below. Some variables of the final dataset titled [full\_merge](../Desktop/full_merge.xlsx) were renamed.

An exploratory data analysis was used for this project. Multivariate graphic methods used for visualizations include bar plot, line plot and scatterplot. The barplot was used to represent continued claims filed under the pandemic expanded programs versus unemployment rate from March 2020 to June 2021.

Chart, bar chart

Description automatically generated

This chart shows the pandemic continued claims to be at their minimum in March 2020 followed by a spike in April when Governor Abbot issued a stay-at-home order leading to more than twice the number of unemployed Texans compared to March. The numbers decreased steadily until September 2020 when most of the state reopened per Abbot’s declaration. From October 2020 to March 2021, the chart shows that the numbers fluctuated just before a slight increase in the continued claims in April 2021 but with no commensurate increase in unemployment numbers. The months of May and June 2021 shows number decrease for all the variables.

Plotly was used to show the numbers of unemployment rate and insured unemployment rate, otherwise known as Continued Claims, in each month from March 2020 to June 2021.

![A picture containing shape

Description automatically generated]()

The plot shows the rates of unemployment and insured unemployment each month. Within the period, insured unemployment rate was at its highest at 51.78 in May 2020 while unemployment rate was at 11.78. In June 2021, the rate of insured employment was lowest at 4.92 with unemployment rate at 6.5. There was a slight increase of insured unemployment rate in April 2021, following the lift of COVID restrictions, but unemployment rate steadily decreased from March to June 2021.

Chart, scatter chart

Description automatically generated

This visualization is to compare the initial claims filed at the start of the pandemic lock-down to the unemployment rate at that time. Initial claim measures the number of new claims filed by unemployed Texans seeking to receive unemployment benefits. Initial claims (IC) are different from Continued Claims which measures unemployed people who already filed an initial claim and are allowed to receive weekly benefits. This plot shows regular and PUA initial claims against unemployment numbers from March 2020 to June 2021. The size of the dots and their positions on the plots visually represents the number of unemployment Texans against initial claims filed each month. The big dots on the graphs for April, May and June 2020 indicates the high levels of unemployment but decreasing consecutively over the three months like the initial claims. For April, May and June 2021, months after the state reopened fully, the dots shrunk significantly in size indicating significant reduction of unemployment numbers as the traditional and PUA initial claims decreased.

Multi-panel plots were used again to show the trend of the numerical variables in the dataset from March 2020 to June 2021. Ggplot’s facet\_wrap tool was used to split the dataset into groups with each variable having its own plot.

Diagram

Description automatically generated with medium confidence

In comparison, there’s an obvious difference between the PEUCC and PUA trend lines, and the unemployment’s within the period. While the unemployment line spiked in April and steadily decreased in number until a slight increase in September, the PUACC’s shows erratic fluctuation in numbers. THE PEUCC steadily increased