Economic Impact of Covid19

Economic Impact of Covid19 Pandemic in Nigeria Analysis

Executive Summary on the analysis of Economic impact of covid19 in Nigeria

Introduction

According to World Health Organization (WHO), Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. Most people infected with the virus will experience mild to moderate respiratory illness and recover without requiring special treatment. However, some will become seriously ill and require medical attention. Older people and those with underlying medical conditions like cardiovascular disease, diabetes, chronic respiratory disease, or cancer are more likely to develop serious illnesses. Anyone can get sick with COVID-19 and become seriously ill or die at any age. The virus can spread from an infected person's mouth or nose in small liquid particles when they cough, sneeze, speak, sing or breathe. These particles range from larger respiratory droplets to smaller aerosols. It is important to practice respiratory etiquette, for example by coughing into a flexed elbow, and to stay home and self-isolate until you recover if you feel unwell.

Before the pandemic, the Nigerian economy was unstable, as the country was already dealing with non-COVID-19 related insecurity, falling oil prices, trade restrictions, and public deficit issues, on top of long-standing development challenges like inadequate fiscal economic policies, unemployment, and inflation. [source- mondaq.com]

This report details the executive summary and findings of the data science project which is an in-depth exploratory analysis of the effect of the covid19 pandemic on Nigeria's economy. This project is an effort geared to help us better understand the state of the economy during the coronavirus (covid19) pandemic. The key metric of measurement of the economy is the gross domestic product (GDP)

Problem Statement: "Nigeria's economy was already unstable due to factors like insecurity, falling oil prices, trade restrictions, and public deficit issues, on top of long-standing development challenges like inadequate fiscal economic policies, unemployment, and inflation but little progress was recorded still in rising GDP for each quarter following a reset for each successive year. Covid19 pandemic brought changes to the socio-economic activities of Nigerians which will impact the country's economy''.
Questions to be answered include:

1) What is the economic state during the pre-covid19 era?

2) What was the GDP state of Nigeria in the first quarter of 2020?

3) What is the GDP state of Nigeria in the subsequent quarters 2 and 3 as we progressed out of the year 2020?

4) What is the final GDP state of the fourth quarter of the year 2020?

The answers provided from the analysis to the four questions above would give us a concise insight into what the state of the nation of Nigeria before and during the covid-19 pandemic. This report is divided into two parts viz the introduction which comes to an end after the stakeholders are stated and the body which begins with the data Overview.

Stakeholders: the key stakeholders include the assessment team of this project at Ustacky and the management. Other stakeholders may include individuals, companies, or groups who might want to use this project as a base for assessing my capacity to qualify for employment.

Data Overview

The data used for this project include the data frame table from the NCDC official website and the daily covid19 cases data from the John Hopkins GitHub repository. Other data include data from external sources provided for the project.

The table from the NCDC website contains information on the number of daily lab-confirmed cases, the number of people in admission, the number of people discharged, number of people that died from the illness.

The data from the John Hopkins GitHub repo contain information on countries and daily lab-confirmed, recovered, and death cases in each data frame.

The external data includes Nigeria's GPD data frame, external covid19 data, and the budget by state data frame.

For this project, we made use of NCDC data, data from John Hopkins GitHub repo, external covid19 data, and GDP data.

Methodology

Libraries: I imported the request library to be used to interact with the NCDC website, I imported the NumPy library for numerical manipulation, the panda's library for data frame manipulation, I imported Beautifulsoup for passing the content of the Html codes, I also imported matplotlib and seaborn library for visualization.

Data Collection: the first data frame I collected for this project is the covid19 table on the NCDC official website where I:-

- passed the NCDC web link to a variable

- used the request() from the request library to request the HTML codes from the backend

- then used the beautifulsoup function to collect the Html codes

- looked into the soup to fetch the chunk of codes containing the table

- collect the column names from the Html codes

- then used a loop to fetch the table info from the Html codes

- the state created the NCDC data frame using the pandas.DataFrame() method to pass the

I used the pandas.read_csv() to read the daily cases data frame from the John Hopkins GitHub repository and the external data sets provided for the analysis.

Approach to Analysis: quantitative analysis was employed in this research work. Some quantitative techniques include regression analysis, trend analysis, and a simple statistical technique. Graphical representation of information to generate insights was also employed.

Analysis and Results

A. I plotted a barplot to look at the daily cases data from the John Hopkins repository and here is what I found Lagos state has the most cases for daily lab-confirmed cases, daily death cases, and daily. The figures below show a barplot of three cases plotted against states in Nigeria respectively:
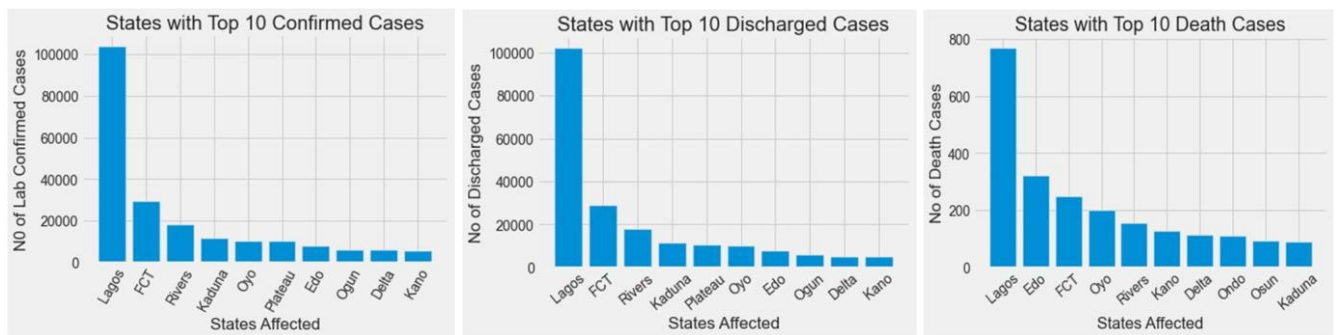

B. I then moved forward to do a visualization of the daily lab-confirmed cases, recovered cases, and death cases as follows:

Daily Recovered Cases
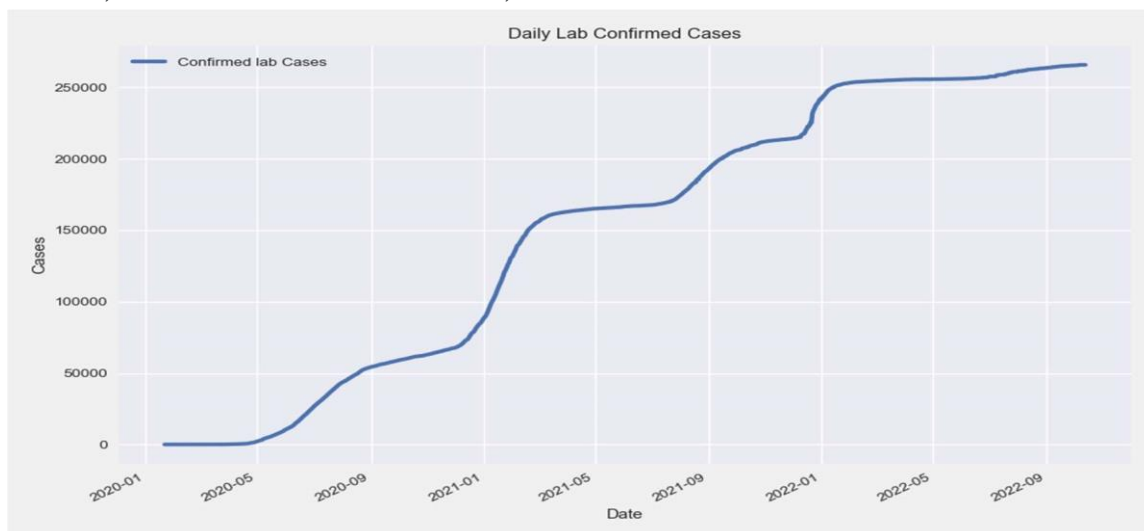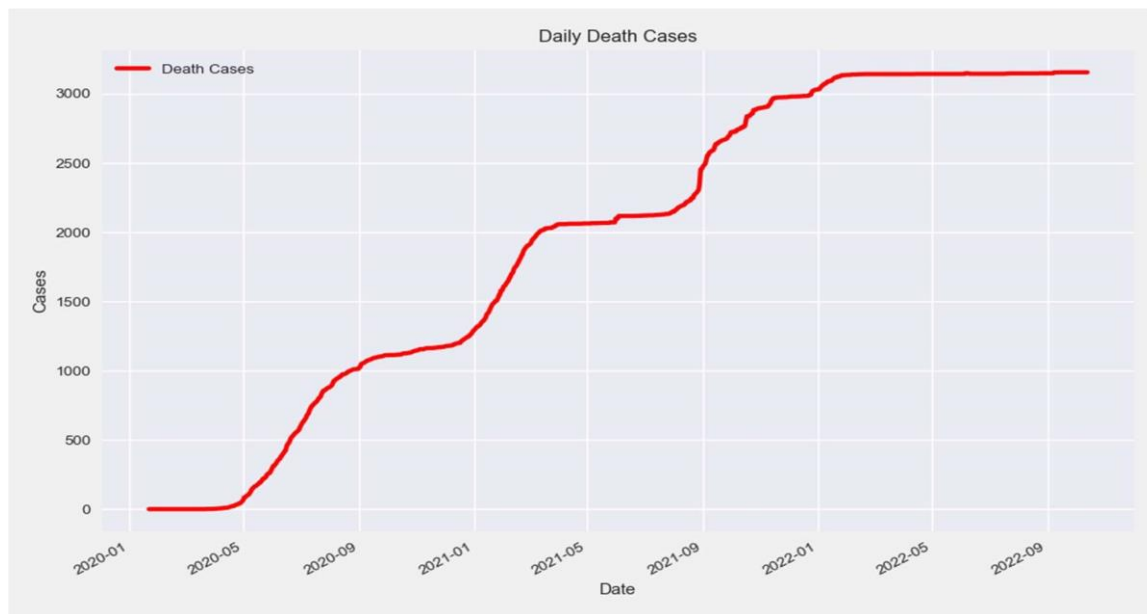
Daily Death Cases

I found Covid19 cases were first confirmed in the month of January 2020, daily lab-confirmed cases and death cases started to surge in the month of May 2020 which is the second month in the 2nd quarter of 2020, daily recovered cases plummeted in July which also is the 2nd month of the 3rd quarter of 2021 and we barely recorded recovered cases.

C. I calculated the daily infection rate using the statistical diff method and also visualized the data to confirm my insight. The following figure visualizes the insights from the data;
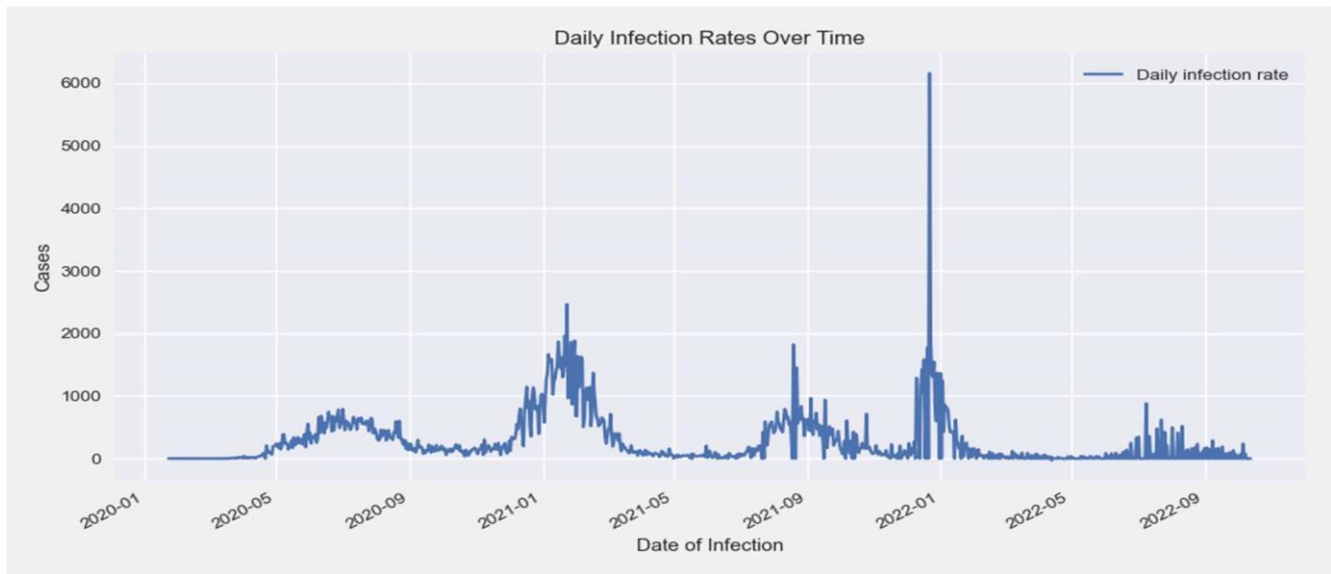
Again, I observed that we had more infection rate at the end of 2021 just as we were about to cross into the new year.

D. To determine the impact of covid19 pandemic on the economy, I plotted the GPD data against the 4 quarters for the different years from 2014 to 2020. For clarity, I plotted three visuals to communicate the best possible insight from the data but resolve to display two in this summary document.
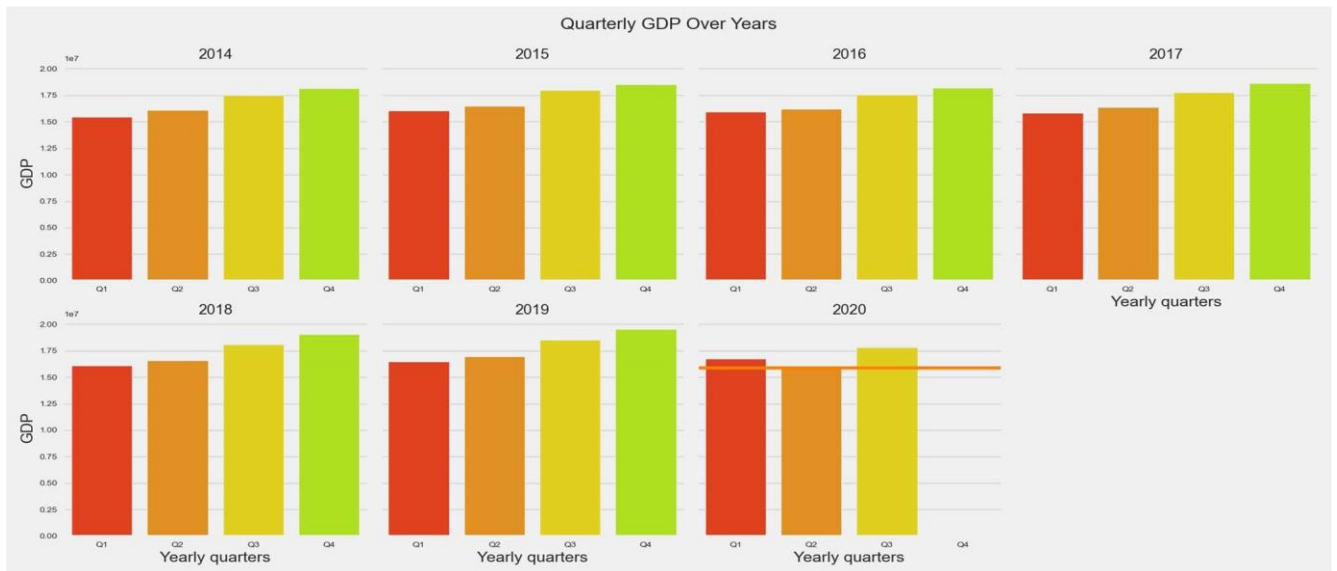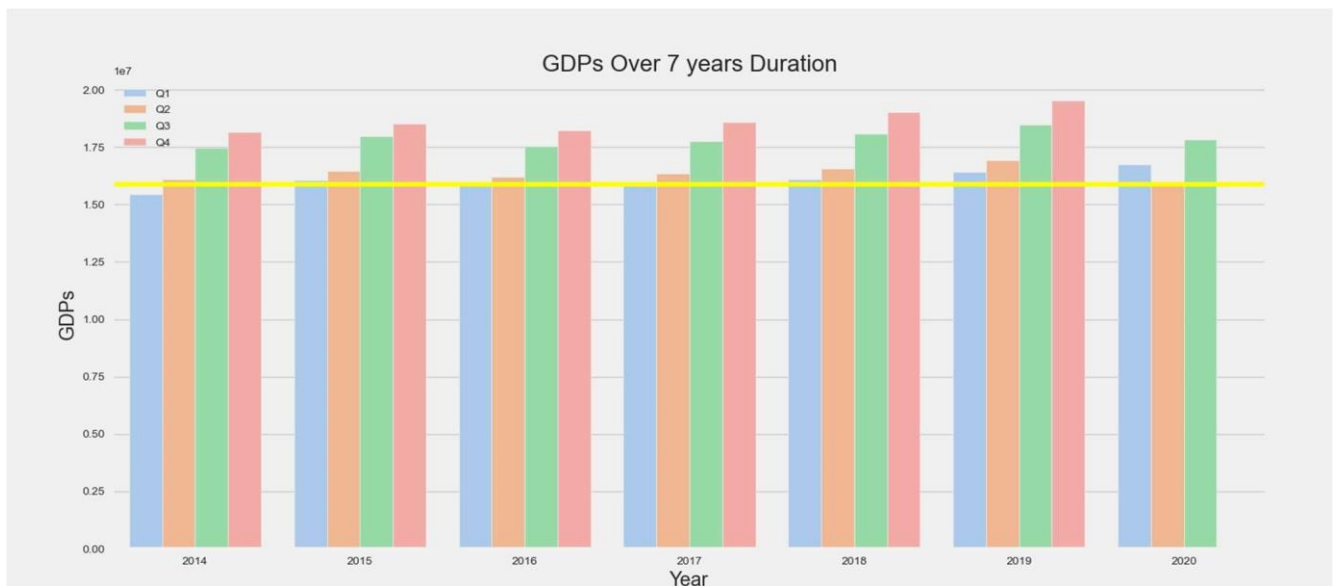
Fig1

Fig2

From the visualization above, despite the pre-covid19 factors promoting unstable growth of the economy, the economy still progresses reasonably from Q1 to Q4 but in 2020 when covid19 struck, we first experience a contracted GDP, a value lower than the GDP of Q1, then Q3 value surge more than Q1 GDP value and subsequently at Q4, there was no recorded value of GDP indicating a total crash or stoppage of the economic activities.

E.   I also used the budget data in the repository to check for meaningful insights. To get this done I sorted the budget data frame with the Initial budget and revised budget columns in ascending order to visualize the data effectively, then visualized the data horizontally as follows;
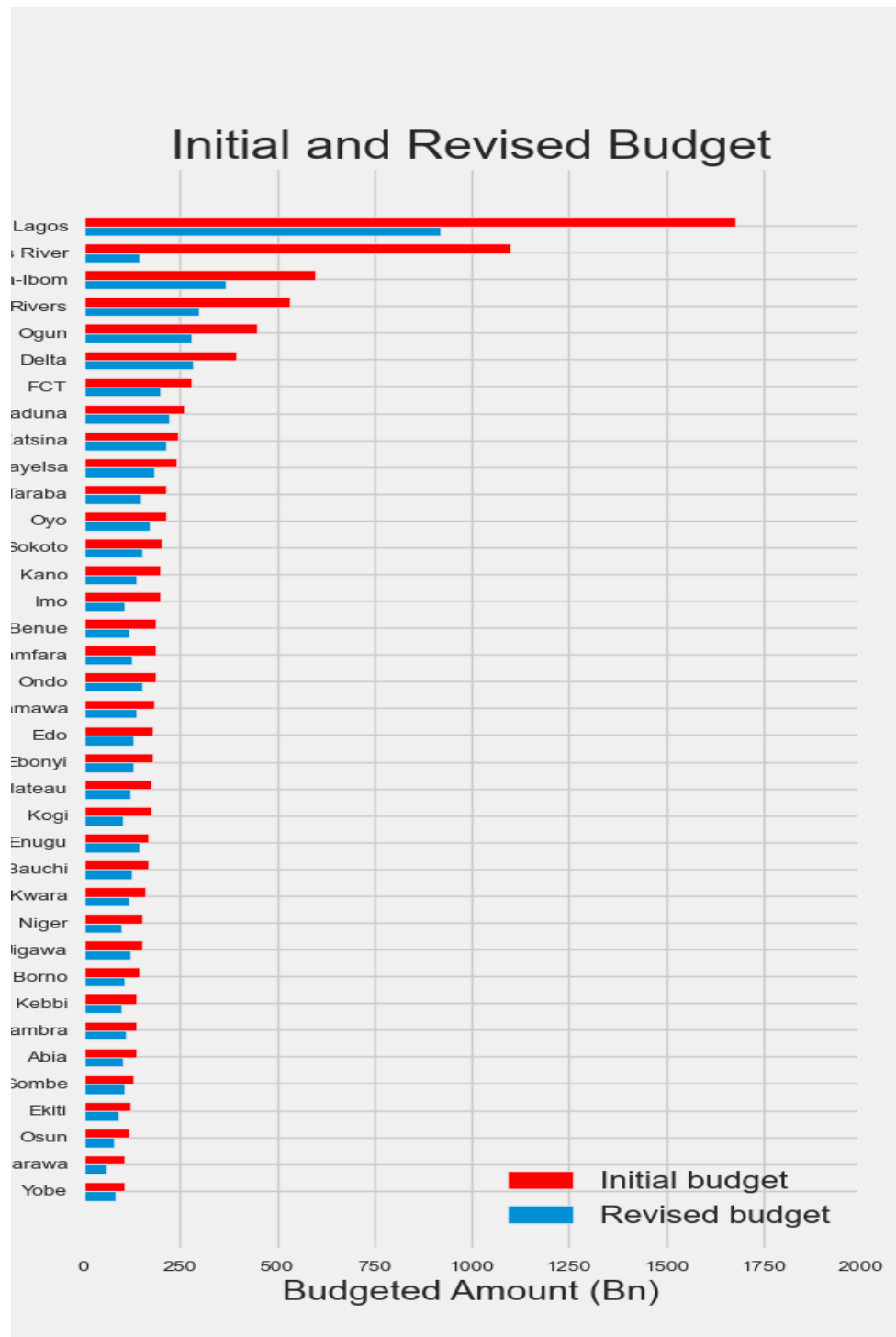
From the visualization above, it means to say that the budget for each state was revised and subsequently reduced due to the situation of the coronavirus pandemic.

Conclusion

Before the analysis we had to account for the following to complete our analysis:

1) What is the economic state during the pre-covid19 era?

2) What was the GDP of Nigeria in the first quarter of 2020?

3) What is the GDP of Nigeria in the subsequent quarters 2 and 3 as we progressed out of the year 2020?

4) What is the final GDP of the fourth quarter of the year 2020?

To account for these questions after our analysis, we were able to ascertain that:

1) The growth of the economy during the pre-covid19 era was unstable.

   We saw a reset of the economy for each successive year.

2) The GDP for Q1 2020 was valued at 16,740,000.0

3) The GDP for Q2 and Q3 was valued at 15890000.0 and 17820000.0 respectively.

4) The GDP for Q4 of 2020 was valued at 0.0000.

In conclusion, there was a total crash in the economic value which indicate that the impact of the coronavirus aka covid19 pandemic was very much disastrous and led to the ultimate collapse of the economy. The budget had to be revised and reduced to account for the necessities of government expenditure.

In the future, I will include predictive analysis with required data to determine the future impact if the covid19 virus is not contained. I will also like to get sample data from authentic good sources to measure impact through consumption, investment, and international trade) and stability (central government budgets, prices, the money supply, and the balance of payments.

References

References include Coronavirus disease (COVID-19) publication by World Health Organization (WHO), Nigeria: An Overview Of The Economic Impact Of The Coronavirus Pandemic In Nigeria 01 September 2021 by Aimee Dushime and Akaoma Osele, archives of the Nigeria center for disease control (NCDC) on covid19, external GDP data sources.