

## The Nature and Impact of the Great Recession 2007-09

The Great Recession was a global economic crisis that decimated the world's financial markets, banking, and real estate industries. As a result of the crisis, the number of people facing foreclosure on their houses has risen dramatically, resulting in the loss of millions of dollars in savings, as well as their employment and their primary residences. As a result, it is often considered to be the longest economic downturn since World War II's Great Depression. Even though the Great Recession had wide-ranging consequences, its origins in the subprime mortgage crisis in the United States and Western Europe were particularly prominent. There was a big change in the role of large financial conglomerates such as Lehman Brothers and Morgan Stanley in the financial sector during the financial crisis. Also, they regularly borrowed money to make investments in these assets on their own. To put it another way, when financial institutions joined the market and took on the role of loan servicers, they were also able to develop new markets for assets. While there are many factors which led to the crisis, through this analysis we shed light on the following aspects which got impacted due to the economic tragedy.

### Stock Market

The Great Recession had a long-term impact on the stock markets. S&P plummeted down by 38.5% in 2008 alone, reaching a new all-time low (Fig 1). The fourth largest investment banking company in the United States Lehman Brothers got huge losses following the mortgage bubble burst. Leaving them no chance but to declare bankruptcy (Fig 2). Tycoons in banking sector such as Bank of America, Citi, JP Morgan, and Wells Fargo went into huge losses as their share prices started to dip (Fig 3).

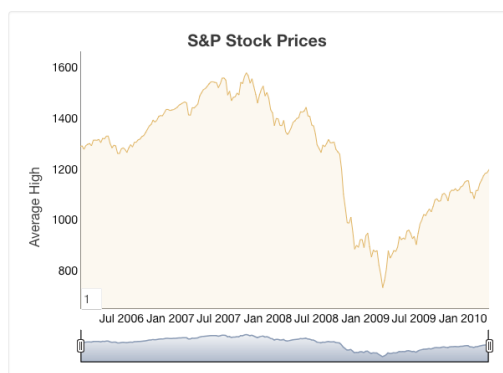


Fig 1.

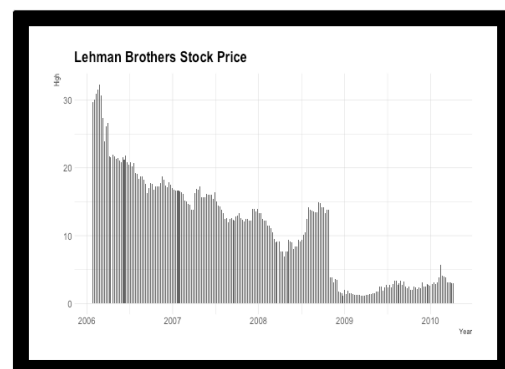


Fig 2.

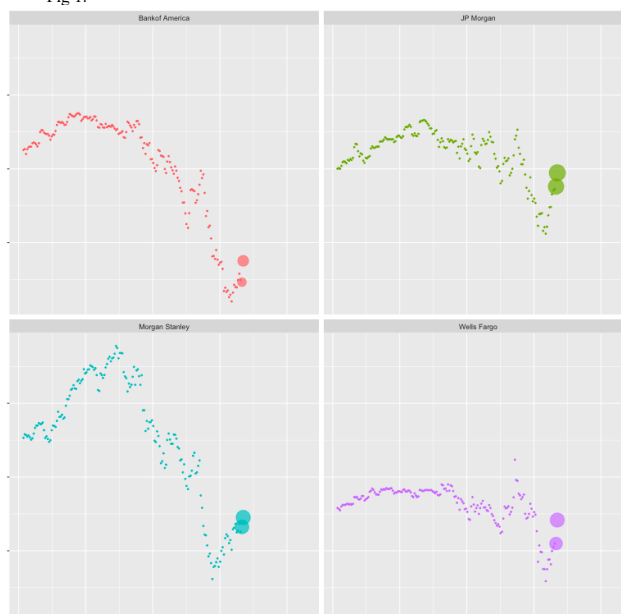


Fig 3.

## Housing

Housing market was one of the major reasons for the economic outbreak of 2007. Due to the collapse of subprime mortgage market, the average home price in the United States started to drop (Fig 3). Due to the recession, there came a huge gap between the home price index and the total mortgage value (Fig 1). As mortgages were overhead and banks started to recover houses from loan defaulters, The home ownership rates went down significantly as shown in Fig 2.

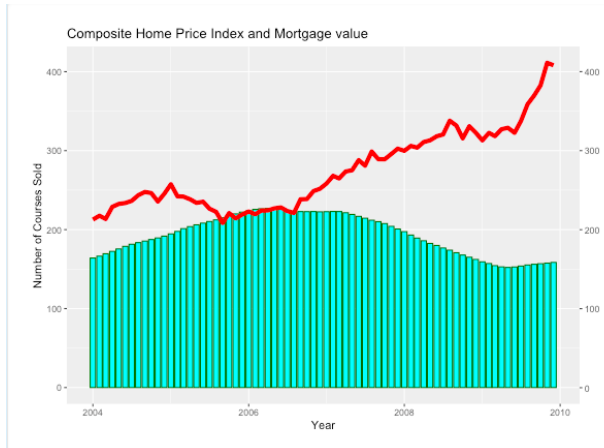


Fig 1

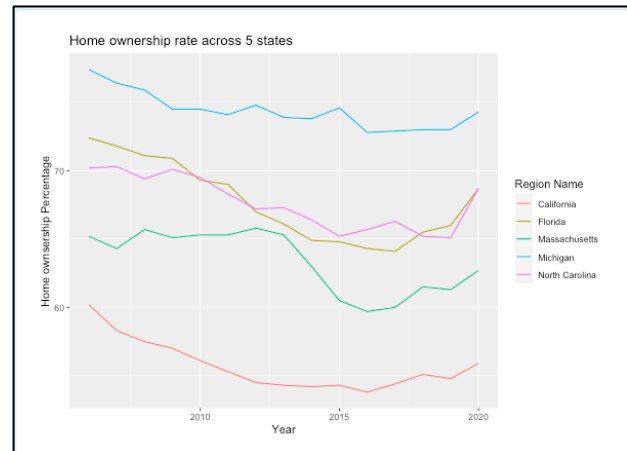


Fig 2.

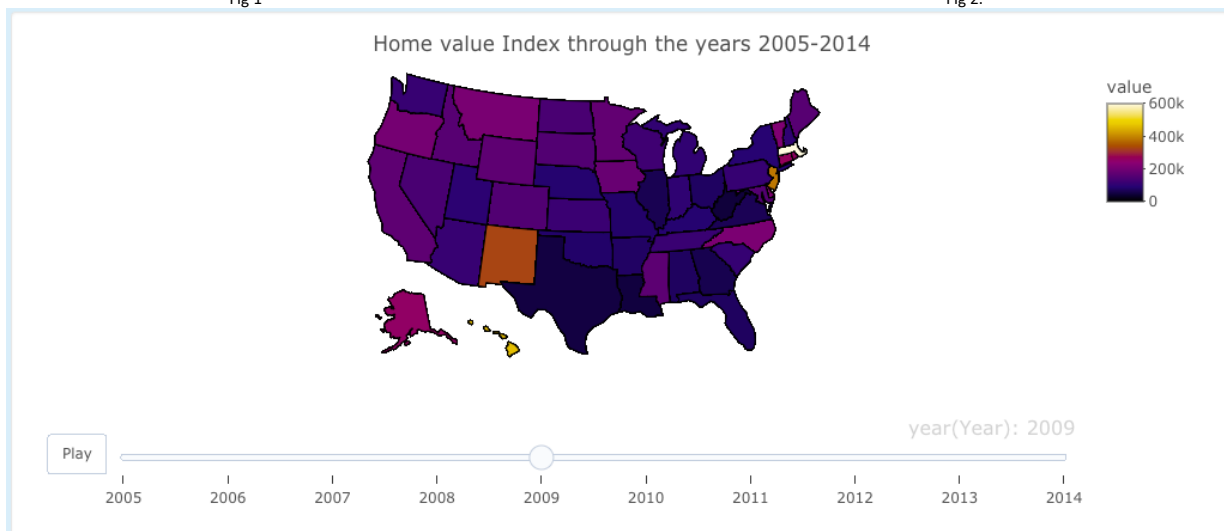


Fig 3

## Financial Sector

Net Loan losses increased drastically due to loan default of individuals. As shown in the Fig 2. The states of California, Florida, Massachusetts, Michigan, and North Carolina saw huge losses in the form of loans. As a result, many banks ceased operations resulting in increase of total number of failures. Fed Funds dropped almost to 0 for the first time ever in the year 2009, following the mammoth of an economic crisis (Fig 1). At this stage, government intervened in bringing back economy. Amid a massive influx of cash from FISCAL and monetary authorities, Currency in circulation soared almost to a trillion dollars (Fig 3).

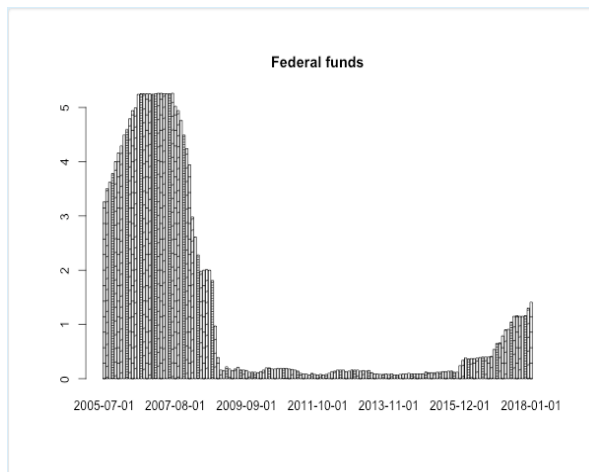


Fig 1.

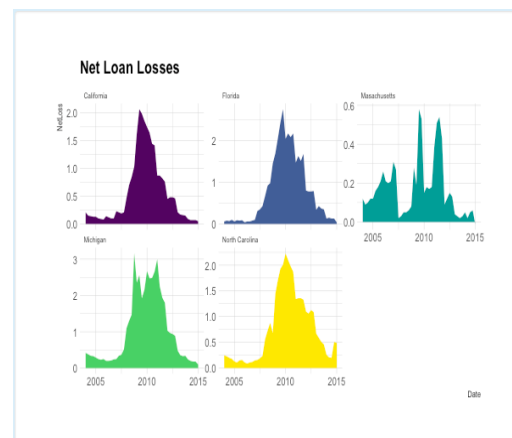


Fig 2.

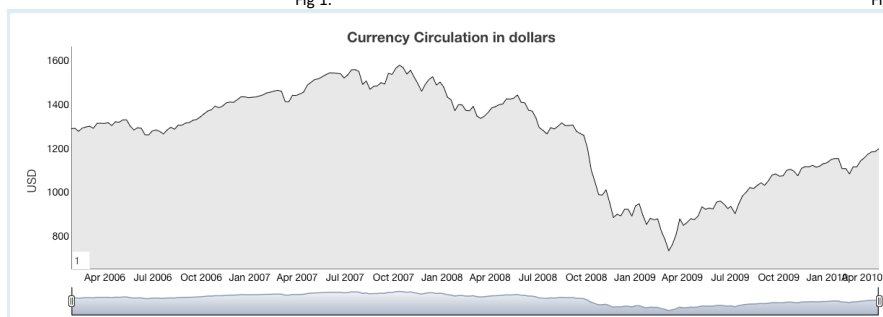


Fig 3..

## Unemployment

The total job openings across the United States saw a huge downturn (Fig 3), following which the aggregated labor unemployment reached new high (Fig 1). Household income of people of the US dipped drastically as shown below. The graph turned darker in the years 2007-2009 indicating the dip in the household income across the states (Fig 2).

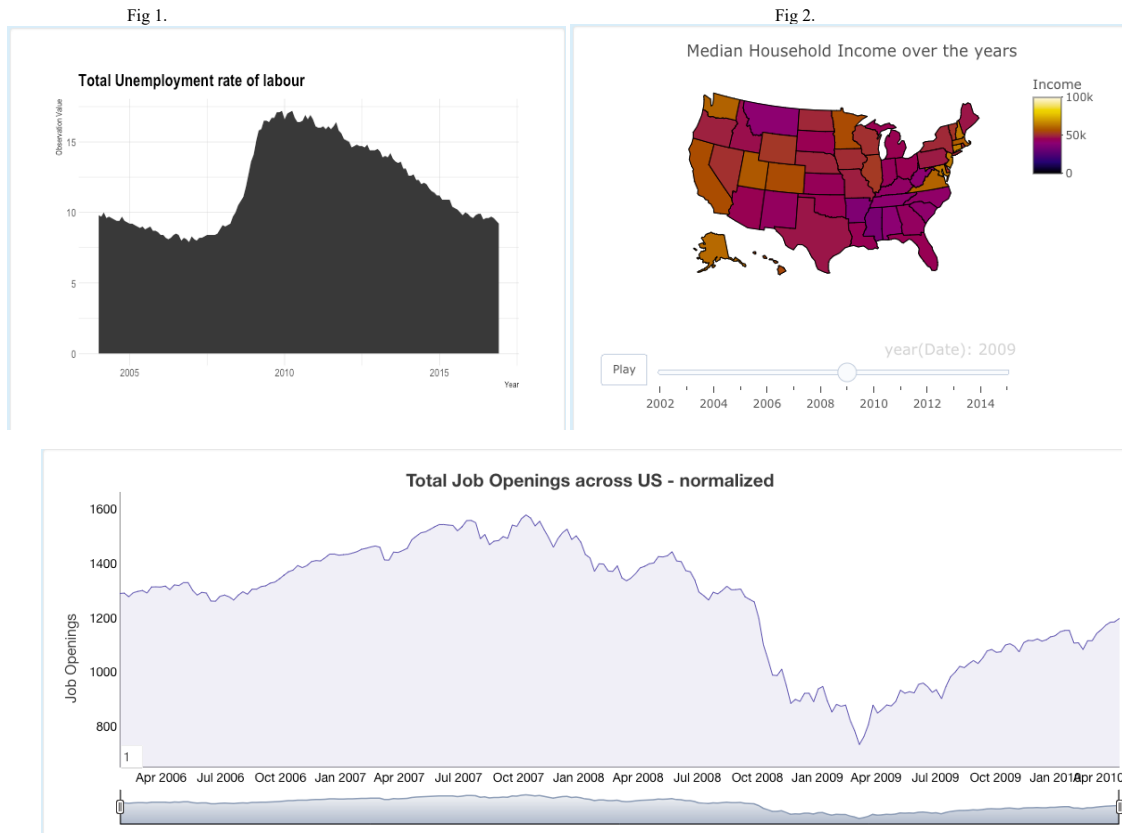


Fig 3.

## Cleaning and preprocessing through R:

- Data type conversion from 'chr' to date format done wherever necessary using as.Date and lubridate functions.
- Eliminated unnecessary columns to clean the dataset.
- Eliminated empty values to remove irregularities in the graph.
- Data pivot done in order to pivot multiple columns into two columns one of which indicates the type and the other indicates its value.

## Libraries Used:

- **Dygraphs** – To plot dynamic graphs.
- **Xts** – to perform groupby operations.
- **Lubridate** – To perform date time conversions.
- **Readxl** – To import excel files.
- **Ggplot2** – To plot graphs using ggplot.
- **Gganimate, gifski** – To animate the graphs and render it as gif.
- **Dplyr** – Used for filtering the data.
- **Htmlwidgets** – Used to export the dynamic graph as html object.
- **Shiny** - Used to create dashboards.