



# Impact of Immigration on U.S. Economy

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## Abstract

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Our Information Visualization Team selected a project to analyze the trends of legal immigration into United States, over a duration of 15 years, from different countries of the world. We focus to analyze, how much the immigration has impacted the country's economy by measuring the correlation among the Immigration and Economic top 5 key Indicators.

- *Gross Domestic Product (GDP) Growth Rate*
- *Gross National Income Per Capita*
- *Unemployment Rate*
- *Consumer Price Index (Inflation)*
- *Gross Domestic Income Annual*

## Introduction

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The effects of immigration on the United States' economy has been a controversial topic since the origin of this country. Some argue that the waves of immigrants negatively impact the wages, job growth, and income of native-born workers, but others believe that immigration has played a substantial role in making the U.S. the world's most flourishing country.

Therefore, understanding these impacts is important if our societies are to usefully debate the role of migration. Such debates, in turn, are essential to designing policies in areas like education and employment that maximize the benefits of migration, especially by improving migrants' employment situation. With readily available data and information on the immigration and economy, it is feasible to investigate the actual effect of immigration on the U.S. economy.

## Process

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A major challenge to immigration research is the difficulty of identifying the effects of immigration on economic variables. To ensure that we are isolating the effects of immigrants rather than effects of other factors, we control for a range of variables that might contribute to differences in economic outcomes. The goal of this project is to create visualizations of key legal immigration aspects related to the economy. To reach this goal, the following visualizations will be created by applying the visualization theories and approaches we have learned in the class.

## Key Activities

- *Data Collection from Multiple References*
- *Data Cleaning, Structuring and Merging*
- *Analyzing the data*
- *Interactive Information Visualization*
- *Data Reporting*

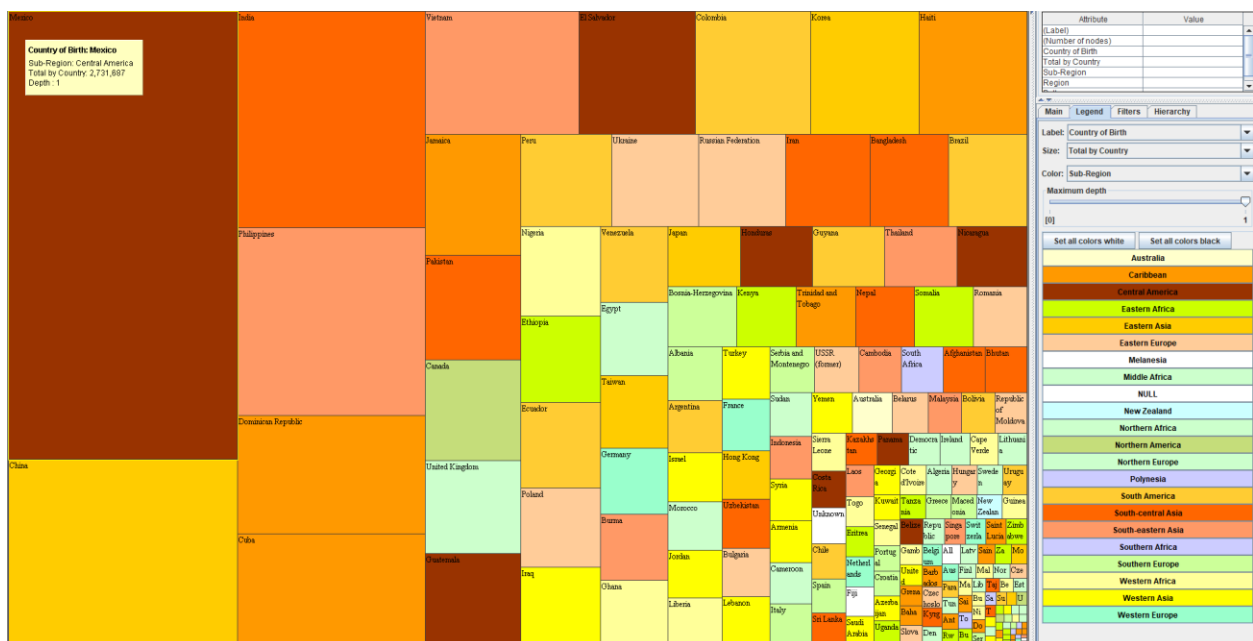
### Line of Analysis:

- *United States Immigration (1999-2015) from different Regions, Sub-Regions and Countries across the world.*
- *United States population and its distribution with respect to Native born and Foreign born.*
- *United States Economy KPIs (1999-2015) such as GDP, GDIA, CPI, GNI, Unemployment Rate and Correlation between them.*
- *Correlation among Economy KPI and Total Immigration.*

## Analysis

### Immigration to United States:

Over the years, the trend of immigration by the continents are almost similar. The maximum immigration is from the America followed by Asia. Immigration from Africa, Europe and Australia are significantly less.

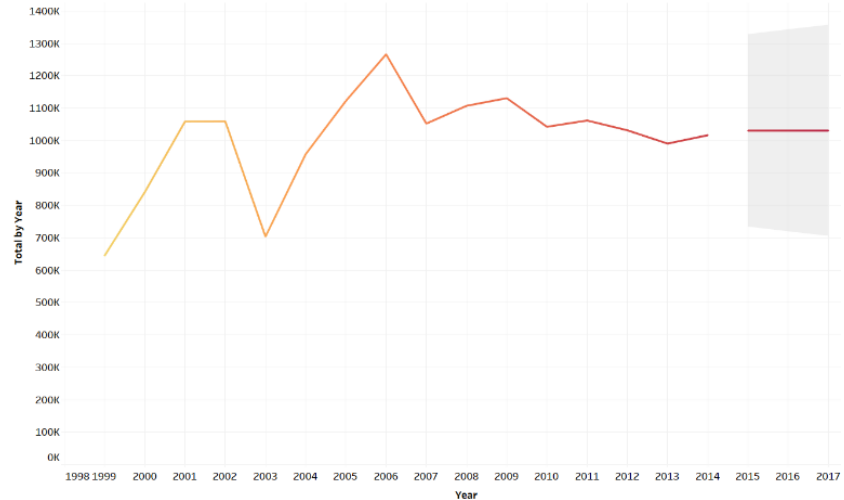


The tree map above represents the rate of immigration denoted by the Size variation for each square and different Sub region are represented by the different colors.

- Among all the countries, the Immigration from following countries in the list are the highest over past 15 years.
- United States has a very high immigration rate from Mexico, China and India every year.
- The total immigration to United states over 15 years is **17,135,182** and from the Top 10 countries is **8,638,390**.

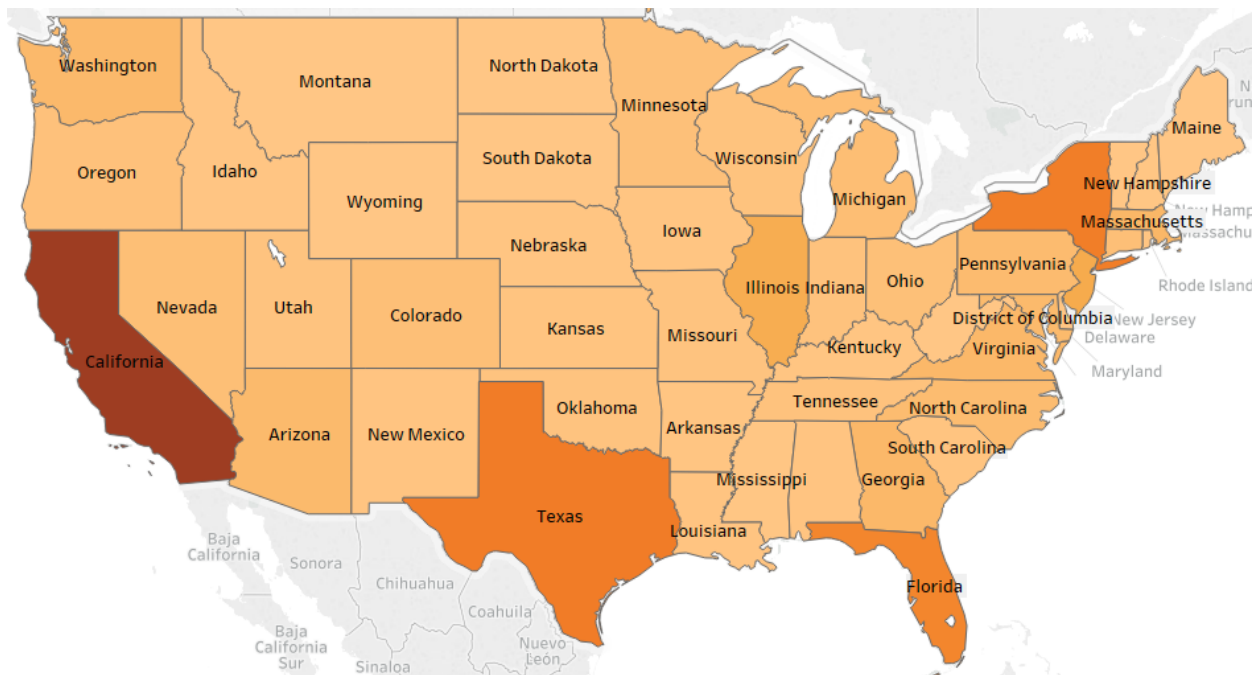
Country of Birth	
Mexico	2,731,687
China	1,131,667
India	1,080,443
Philippines	935,779
Dominican Republic	588,582
Cuba	553,936
Vietnam	503,687
El Salvador	381,896
Colombia	375,859
Korea	354,854

- The graph shows a trend of Immigration over the years (1999-2015).
- Years 2001-2002 and 2005-2006, stands out to have a high increase in immigration.
- Similarly, Years 2003 and 2007, stands out to have high decrease in total immigration.



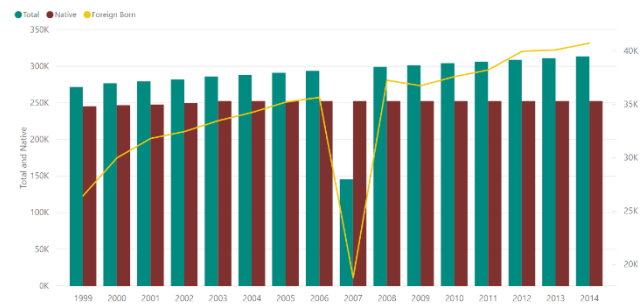
### ***Foreign-Born Composition of United States (States and Population):***

California, Texas, New York, Florida and New Jersey are top 5 states with maximum foreign-born population and has high immigration rate.



*The visualization above shows foreign born population of different states of United States. The color variation represents the magnitude of the immigration (Light yellow to Deep Red Magnitude Increases).*

The number of foreign born U.S. citizens includes citizens who were naturalized that year and undocumented immigrants living in the country and the graph above shows that the immigration rate is steadily on the rise other than the year 2007.



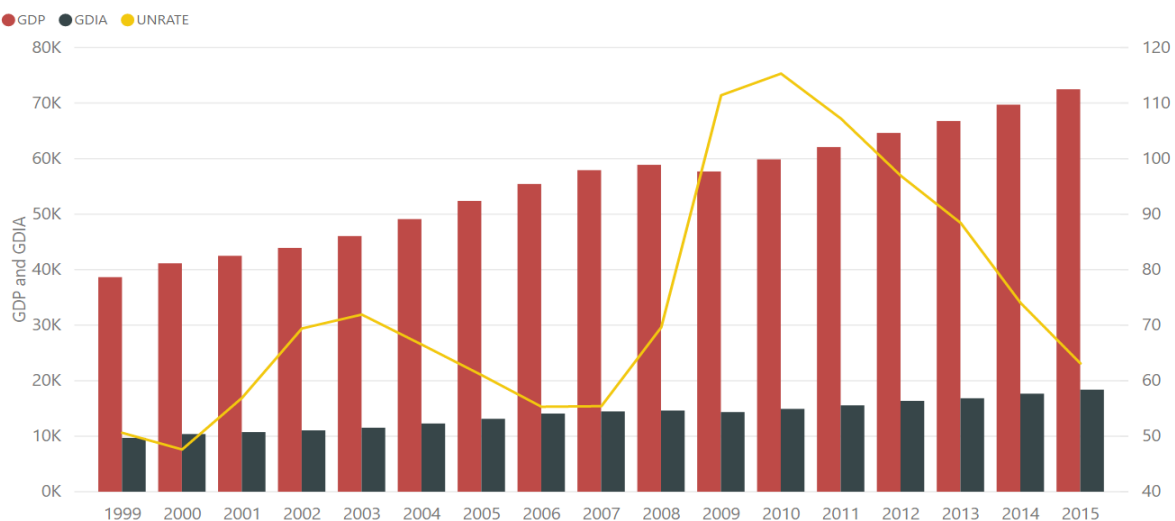
### *Economy of United States:*

There has been a steady rise in the Gross Domestic Product (GDP) for the last 15 years based on the data analyzed from the Federal Reserve Bank of St. Louis. It is important to notice that over a 15-year period, the average GDP has double at a gradual, and steady rate.

Looking at the Gross Domestic Income for the USA shows that it has been very consistent for the most part aside from the slight decrease in 2009. Which could have been due to the major recession the country was in for a while.

The Consumer Price Index has two periods where there is only a .02 percent increase and that is between years 2001-2002 and 2008-2009. The CPI slightly drops in 2009 and shows a steady increase from there to 2015.

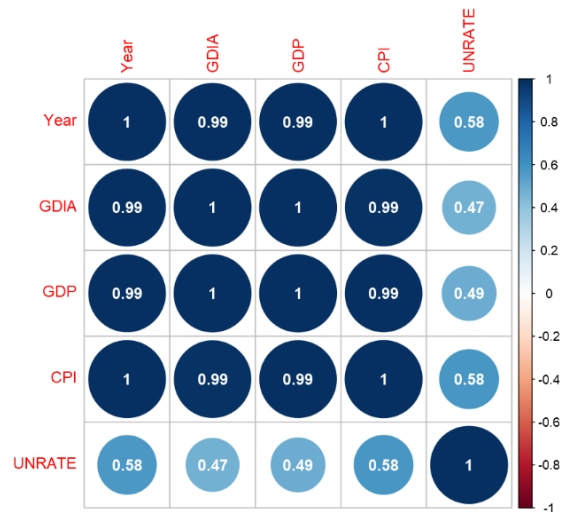
### **GDP, GDIA and Unemployment Rate**



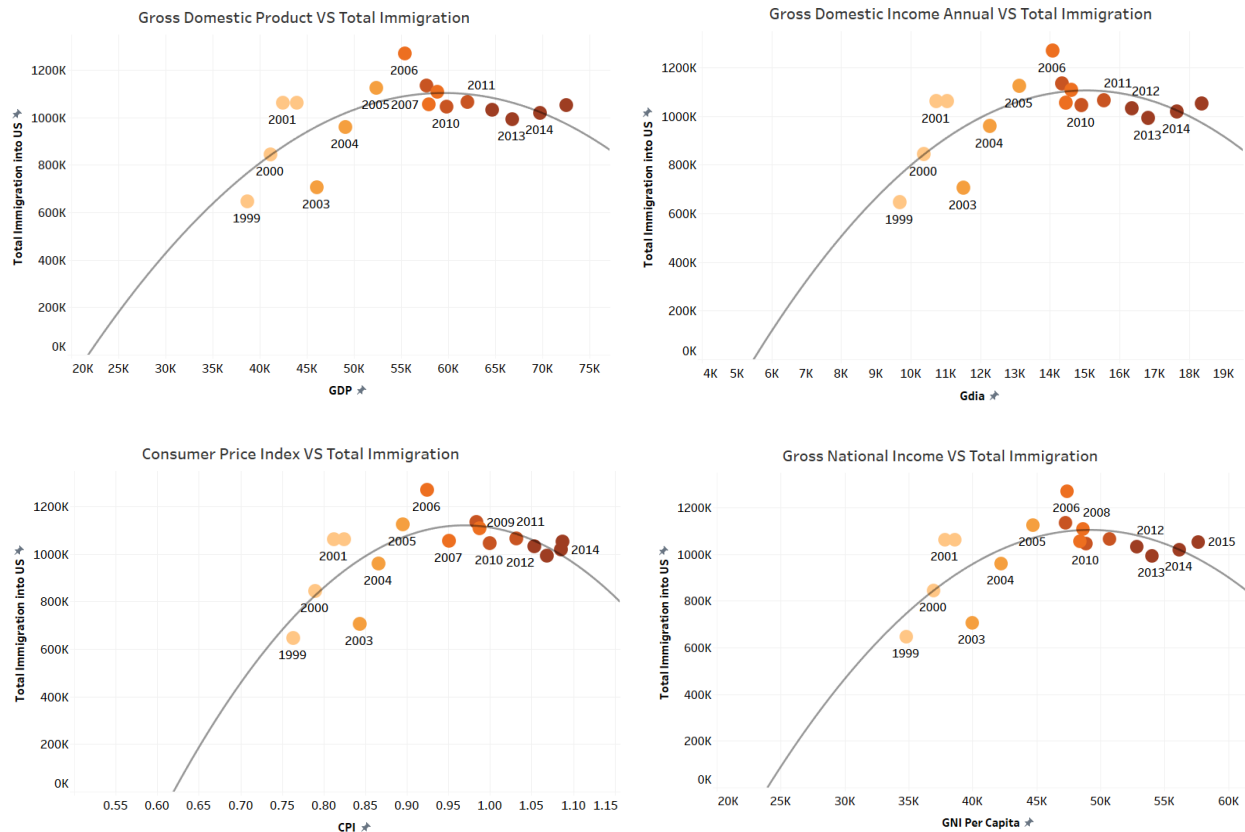
The unemployment rate in this visualization is shows a very erratic pattern of fluctuation. The unemployment rate is at its lowest in 2000, but at its highest in 2010 which might point to external economic factors along with the GDP and GDIA that contribute to the trend.

### Correlation among Economy KPI

The key indicators of the economy could possibly have correlation between each other because of how they are the main factors that contribute to a successful or unsuccessful economy in the United States.

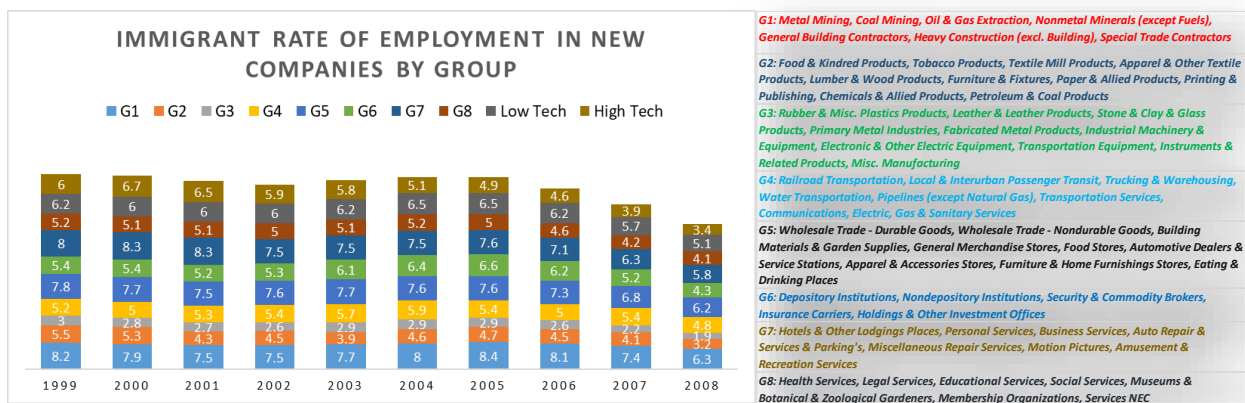
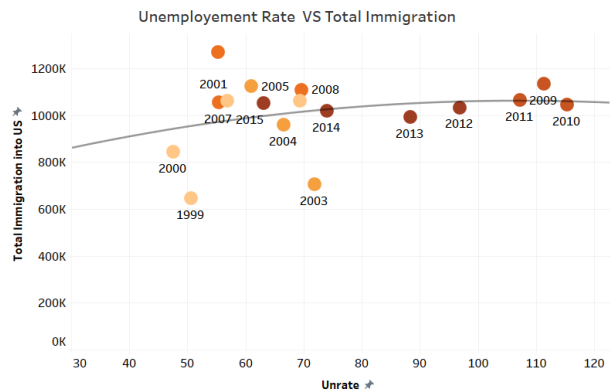


### Correlation among Economy KPI and Total Immigration



Economy KPIs shows a strong correlation with the Immigration. Therefore, immigration rate impacts the U.S. economy (GDP), GNI, CPI etc. by making it larger or smaller depending on its magnitude.

Few assumptions are, immigrants diminish the job opportunities of workers born in the United States. Unemployment shows the least correlation with Immigration. The year 2006 shows highest immigration and Least Unemployment Rate. This suggests that the economy absorbs immigrants by expanding job opportunities rather than by displacing workers born in the United States.

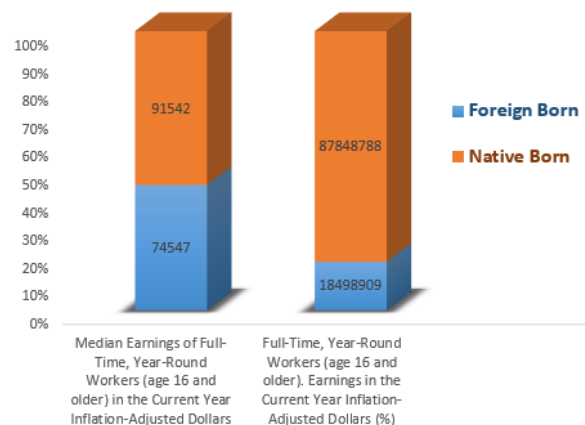


The above graph shows an Immigrant rate of employment in new companies. For the year, 2007 and 2008, it shows a significant decrease for every sector. In 2007, we already have identified a significant reduction in immigration. With the above analysis, it is evident that, although, immigration has not impact on unemployment rate, but less immigration impacts the rate of employment of immigrants negatively.

The stacked graph shows a quick overview of the number of native-born workers and foreign-born Workers and average earning for them for year 2015.

On average, the earnings of foreign-born are higher than average income of native-born.

Earnings VS Worker (2015)



## Conclusion

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With our analysis it is evident that immigration does impact the Economy KPIs such as GDP, GNI, CPI, GDIA significantly. The most accurate way to gauge the net impact of immigration on such an economy is to analyze the effects dynamically over time. Data show that, on net, immigrants expand the U.S. economy's productive capacity, stimulate investment, and promote specialization that in the long run boosts productivity.

California, Texas, New York, Florida and New Jersey are top 5 states with maximum immigrant's population.

When considering the economics of immigration, we identified and established following:

- First, Immigration into U.S. is mostly from Central and South-Central America, Eastern and South-Eastern Asia. Top 3 countries are Mexico, China and India every year.
- Second, immigration rate impacts the U.S. economy (GDP), GNI, CPI etc. by making it larger or smaller depending on its magnitude. Although, whether the native-born benefits from the larger economy is out of the scope of analysis.
- Third, the immigrations don't affect the employment opportunities of native-born workers. At the same time, a rise in unemployment rate could lead to low immigration rate. However, our analysis is limited to legal immigration based on country of birth.

## References

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### **Data retrieval Link:**

- **Migration Policy Institute, U.S Immigration Trends**  
<https://www.migrationpolicy.org/programs/data-hub/us-immigration-trends>
- **Bureau of Economic Analysis**  
<https://www.bea.gov/national/index.htm>
- **Bureau of Labor Statistics:**  
<https://www.bls.gov/opub/mlr/2016/>

### **External Sources:**

- **Yearbook of Immigration Statistics:**  
<https://www.dhs.gov/immigration-statistics/yearbook>
- **DHS-Office of Immigration Statistics (OIS):**  
<https://www.dhs.gov/immigration-statistics/visualization>
- **United States Census Bureau:**  
<https://www.census.gov/programs-surveys/cps.html>
- **The Effects of Immigration on the United States' Economy:**  
<http://budgetmodel.wharton.upenn.edu/issues/2016/1/27/the-effects-of-immigration-on-the-united-states-economy>