Excel Project

United States of America Unemployment Rate Analytics

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PROFESSIONAL BACKGROUND

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I am a data and BI Analyst with over three years of experience, with a strong background in analyzing large and complex datasets and delivering actionable insights to stakeholders. I am detail-oriented with a passion for problem-solving and a commitment to delivering high-quality results.

As a data analyst with 3 years of experience, I am highly skilled in using various tools and technologies to analyze and visualize data. My educational background in chemical engineering has provided me with a strong foundation in math and statistics, allowing me to approach data analysis with a rigorous and detail-oriented mindset.

I am proficient in using Excel, Power BI, Power Automate, SQL, Tableau, Azure, SSIS, and Python to extract, transform, and analyze data from various sources. I have experience working with large datasets, building data models, master data management, and developing interactive dashboards and reports.

My strong analytical and problem-solving skills enable me to identify trends and patterns in data and provide actionable insights to drive business decisions. I am able to communicate complex technical concepts to non-technical stakeholders, making data-driven recommendations that help organizations optimize their operations and achieve their goals.

Overall, I am a versatile and resourceful data/BI analyst with a track record of delivering high-quality work under tight deadlines. I am passionate about using data to solve real-world problems and am always eager to learn new technologies and techniques to improve my skills.

OUTLINE

PROJECT DESCRIPTION

Situation: The United States economy has been experiencing significant changes in unemployment rates over the past few years. In a hypothetical situation as a Data Analyst, I was tasked with analyzing and interpreting the recent unemployment data (1976 – 2022) to identify trends and provide recommendations for policy makers.

Task: My task was to collect and analyze the latest United States unemployment data, identify trends, and provide insights and recommendations based on my findings.

Action: To analyze the unemployment data, I took the following actions:

- Downloaded the dataset from Kaggle.
- Cleaned and analyzed the data to identify trends, such as changes in the overall unemployment rate, correlation between labor force and unemployment, and changes in location demographics of the unemployed, employed and labor force.
- Conducted statistical analysis to identify the factors that are driving the changes in the unemployment rate, such as changes in the labor force rate and demographic.
- Provided insights and recommendations to policymakers using the McCandless method of data presentation on potential policy changes to reduce the unemployment rate, such as investment in education and job training programs, increasing government spending on infrastructure projects, and implementing tax incentives to encourage businesses to hire more workers.

Result: As a result of my analysis, I identified several key trends and insights in the United States unemployment data. Some of the key findings are;
The unemployment rate has been declining steadily since 2010 and again increased due to the COVID-19 pandemic in 2020 but has recently decreased to 4% of the labor force in 2022.
However, the data is incomplete because there's no data on sectors and genders to identify the sector with the highest unemployment as well as genders and age ranges.
Overall, my analysis provided policymakers with insights and recommendations to help address the current unemployment trends in the United States.

DATA DESIGN

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The US unemployment data collected was downloaded from Kaggle in a CSV format. I discovered the data contained some wrong calculated columns. I checked for duplicates and blank cells. I ensured my headers are well written, ensured there is consistency in the data, and made sure all the columns matched.

I cleaned the data by ensuring the States column are unique and are the same with the 50 states in US because some values in the state column are counties and cities. So, I removed the counties and Cities in the dataset under the States column because the data was already included in their respective states.

The Los Angeles County rows was removed because it's data is already present in California State. I also removed New York City data because it's already present in the New York State details.

And finally, I used Microsoft Excel to create measures, pivot tables, visualizations, and dashboard to support my analysis.

FINDINGS

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UNEMPLOYMENT RATE TREND

The unemployment rate has been declining steadily since 2010 and again increased due to the COVID-19 pandemic in 2020 but has recently decreased to 4% of the labor force in 2022.

In 2010, the unemployment rate was very high, this was because, the US was going through severe economic downturn, which began in 2008 and lasted until 2009. The recession led to a significant decline in economic activity and resulted in the loss of millions of jobs across the country. This contributed to the high rate of unemployment in the US in 2010. It took several years for the economy to recover fully from the recession, and it wasn't until 2014 that the unemployment rate returned to pre-recession levels

FINDINGS CONT.

TOP 10 STATES WITH THE HIGHEST EMPLOYMENT & UNEMPLOYMENT

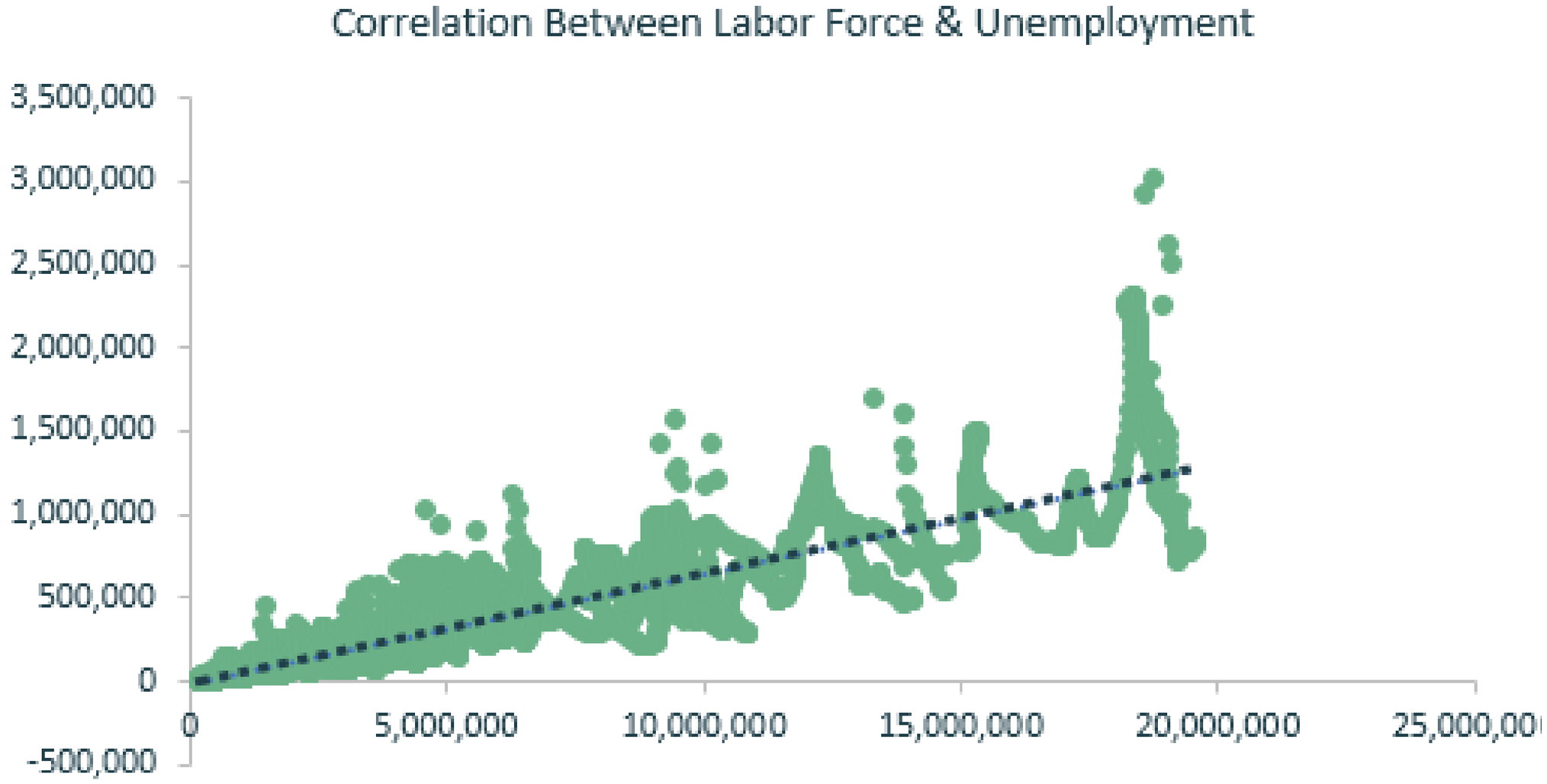
From the chart, California has consistently been the state with the highest number of both employed and unemployed people in the United States. From 1976 - 2022 period, California generated over 8.3 billion employed individuals, which is the highest among all states, and 644 million unemployed individuals, which is also the highest among all states. This could be attributed to the state's large and diverse economy.

Following California, other states that have also consistently generated high employment numbers include Texas, New York, and Florida. These states have also experienced rapid economic growth.

It is worth noting that while California has consistently generated high employment numbers, the state also has a high cost of living and housing, which has been a challenge for some residents.

FINDINGS CONT.

CORRELATION BETWEEN THE LABOR FORCE POPULATION & UNEMPLOYMENT POPULATION



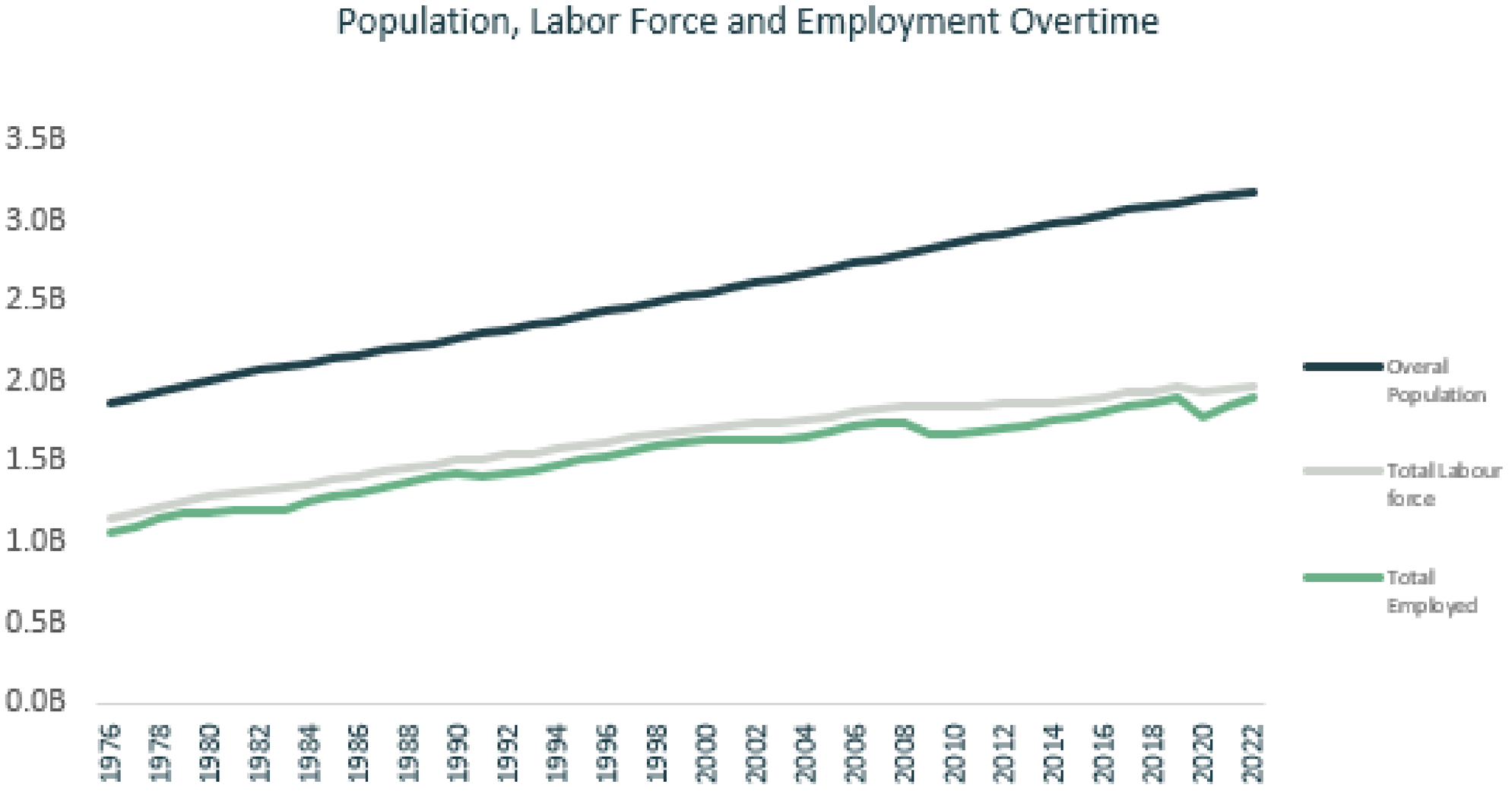
There is a positive correlation between the labor force and the unemployed population in the United States. This means that as the labor force increases, the unemployment rate tends to rise as well.

This relationship can be attributed to several factors, including an increase in the number of individuals entering the workforce, a decrease in the number of available job opportunities, and changes in the overall economic conditions.

For instance, when there is an increase in job opportunities, more people may enter the labor force to seek employment, resulting in a higher labor force. However, if the number of job opportunities does not keep pace with the increasing labor force, this could result in a rise in the unemployment rate. Similarly, during an economic downturn, there may be a decrease in job opportunities, leading to a rise in the number of unemployed individuals

FINDINGS CONT.

POPULATION, LABOR FORCE AND EMPLOYMENT OVERTIME



In the United States, there is a positive correlation between the overall population and the labor force and employment rate. This means that as the population grows, so does the number of individuals in the labor force and the employment rate.

One of the main reasons for this trend is that a larger population typically results in increased economic activity and job creation. As more people enter the workforce, the labor force also expands, creating more opportunities for employment.

Moreover, a larger population may also attract businesses and industries to set up operations, leading to increased job opportunities and economic growth. This, in turn, can further boost the labor force and employment rate.

CONCLUSION

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The US unemployment rate has experienced significant fluctuations over the years, with a high unemployment rate in 2010 due to a severe economic downturn. However, the unemployment rate has been steadily declining since 2010, except during the COVID-19 pandemic in 2020 where it increased. California has consistently been the state with the highest number of both employed and unemployed people, followed by Texas, New York, and Florida.
The positive correlation between the labor force and unemployed population means that as the labor force increases, the unemployment rate tends to rise as well. The overall population is also positively correlated with the labor force and employment rate, with a larger population leading to increased economic activity and job creation. While California has consistently generated high employment numbers, the state's high cost of living and housing has been a challenge for some residents. It is essential to note that other factors, such as education, skills, and workforce participation rates, also play a crucial role in the labor force and employment rate.

Overall, understanding the relationship between the labor force, unemployment rate, and population growth is essential for policymakers and individuals seeking to understand and address employment challenges in the United States.

APPENDIX

Excel Dashboard Link >>> Here

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