**What are the factors that affect the unemployment rate?**

This project is trying to understand different factors that affect the unemployment rate in the US. Three datasets, which are tobacco consumption, renewable energy, and government spending on education are used to examine the relationship. Studies have shown that smokers have a harder time finding jobs. Since using tobacco negatively affects human health, it is believed that smokers don’t have good health to join the labor market, and this increases the unemployment rate in US.

For renewable energy consumption, research pointed out that clean energy industries are boosting job creation. However, they involve modern technology and require higher skills from employees and the increase in renewable energy reduces the job opportunities in the fossil fuel industry. The job creation can’t offset the job losses and therefore increases the unemployment rate.

This project also compares the spending on education and the unemployment rate since education is an important factor in the labor landscape. With higher skills and better education history, workers may have higher chance to land a job.

1, Tobacco Consumption:

A graph of a graph showing the amount of unemployment

Description automatically generated

**Analysis:**

This graph illustrates the relationship between the unemployment rate and tobacco usage in the United States from 1995 to 2010. Starting from 1996, both the unemployment rate and the smoking rate decreased simultaneously. Tobacco usage declined from 20% to around 17% in 2001, while the unemployment rate slightly decreased from around 6 to 4 in the same year. Between 2001 and 2002, both the unemployment rate and tobacco usage increased. This could be attributed to the introduction of e-cigarettes and new vaping products. After 2002, tobacco consumption steadily decreased from 18% to 13% by 2010. Concurrently, the unemployment rate also decreased. However, due to the financial crisis in 2008, it began to rise, reaching 10% by 2010.

2, Renewable Energy Consumption

A graph showing the growth of the economy

Description automatically generated

**Analysis:**

This graph illustrates the trends in the unemployment rate and renewable energy consumption in the United States from 1995 to 2010. Initially, from 1995, the unemployment rate experienced a slight decrease, reaching 4% by 2000. In contrast, the pattern of clean energy usage differed significantly. It began to decline from 1997 and rapidly dropped below 1 billion Btu by 2001. Subsequently, starting from 2002, energy consumption witnessed a consistent increase, reaching 6000 billion Btu by 2010.

However, the trajectory of the unemployment rate took a divergent path. Following the decline in renewable energy consumption, the unemployment rate increased after 2001, with a notable surge occurring from 2005 onwards. This upward trend persisted, culminating in a significant rise to 10% in 2010 due to the financial crisis.

3, Total government spending on Education (as GDP share):

A graph of a graph showing the amount of unemployment rate

Description automatically generated with medium confidence

**Analysis:**

This graph displays government spending on education and the unemployment rate in the US from 2000 to 2020. We notice that both lines don't move in the same way. The red line represents government spending on education as a share of GDP. It slightly increased from 2000 to 2009 but dropped significantly to around 5% in 2015. After that, education spending began to rise again, reaching around 6% by 2020, while the unemployment rate decreased.