



Economic Climate: How it Impacts Startups in California

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Introduction



Entrepreneurship in California

- California and Silicon Valley are recognized as hubs for startups
- Economic variables can play a vital role in the fortune of new companies
- We aim to identify relationships between failed startups and economic factors including:
 - GDP
 - Unemployment rate
 - Inflation and interest rates
- Failed startups are defined by our dataset as those that have formally closed



Community Impact

Why look at the relationship between California's economy and startup failure rate within the state?

- Small businesses constitute a large proportion of California's economy and contribute to the state's revenue each year
- Identifying patterns between the economic conditions (as reflected by economic indicators) can help small business owners:
 - understand market conditions and potential challenges
 - adapt strategies
 - mitigate risks

Expected vs. Actual Results



Gross Domestic Product (GDP)

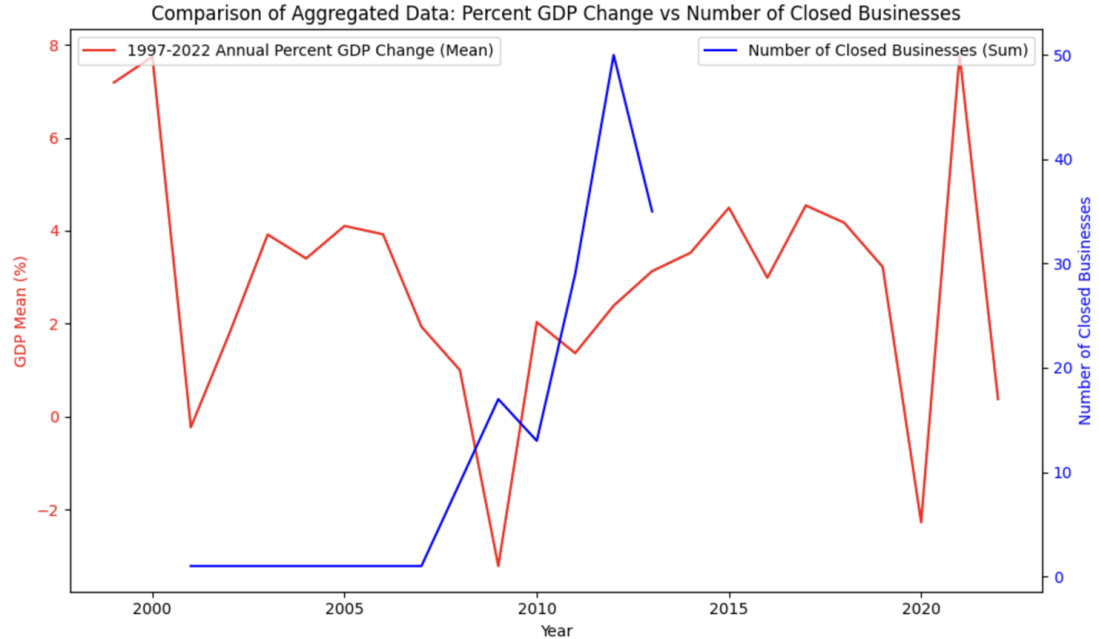
- State GDP estimates the monetary value of the goods and services produced in a state

Expectations

- Indirect relationship between GDP and number of failed startups*
- Increased GDP indicates economic growth (higher consumer spending, increased business investment, increased demand, etc.)
 - Greater demand → increased opportunity → higher revenue → reduced likelihood of failure

GDP: Results

- Outliers (% GDP Change)
 - 2007-08 : Financial Crisis
 - 2020: Covid-19 Pandemic
- Outliers (Number of closed small businesses)
 - 2007-2012: Financial Crisis
- Correlation Coefficient: 0.1298
 - weak positive linear relationship
 - lack of small business data after 2015



Cannot say that California's GDP is correlated with the failure of its small businesses

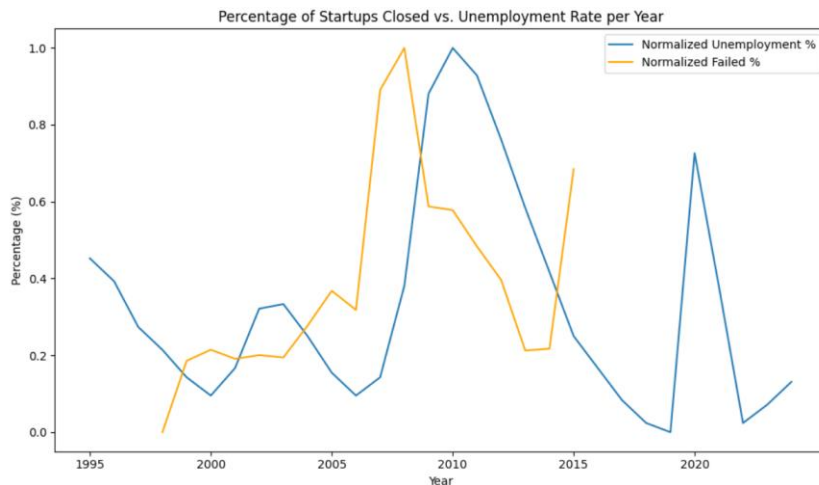
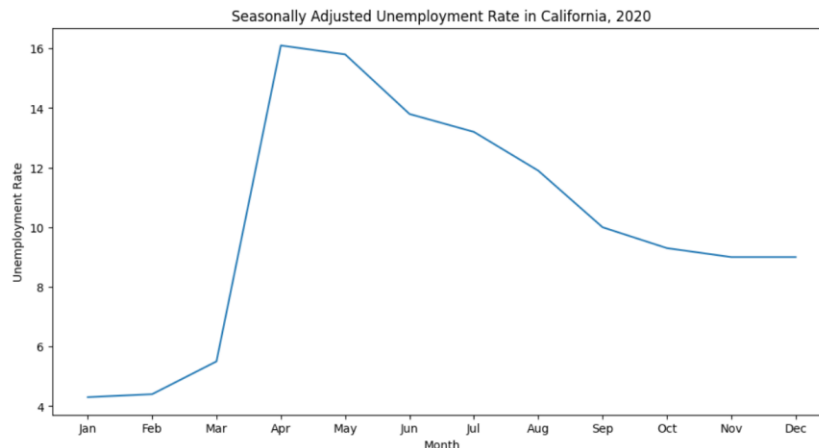


Unemployment Rate: Expectation

- We expect a direct relationship between unemployment rates and percent of failed startups
- Securing loans
 - High unemployment rate leads to stricter lending prices
- Consumer spending and confidence
 - Low unemployment rate results in more demand for goods and services, as well as higher consumer confidence

Unemployment Rate: Results

- Outliers in April - July, 2020
 - COVID-19
- Largest increase 2008-2010
 - Housing market crash
- Correlation coefficient of 0.245
- Correlation coefficient of 0.774 with 2 year offset



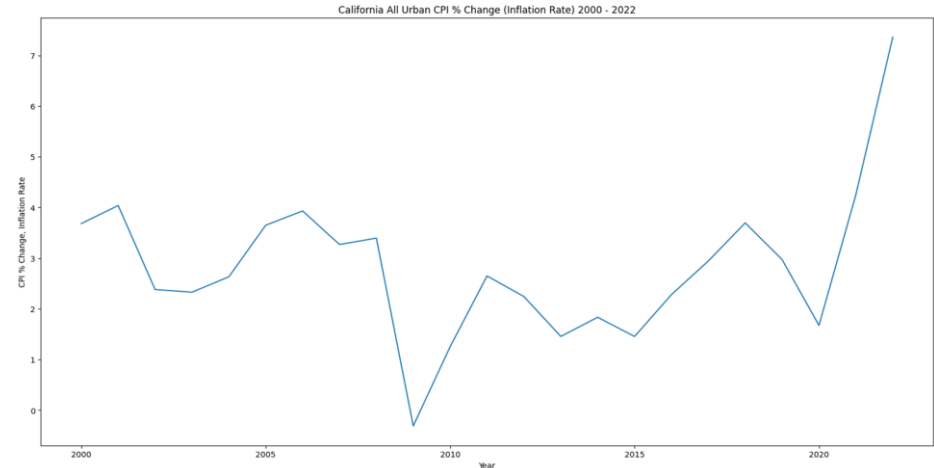
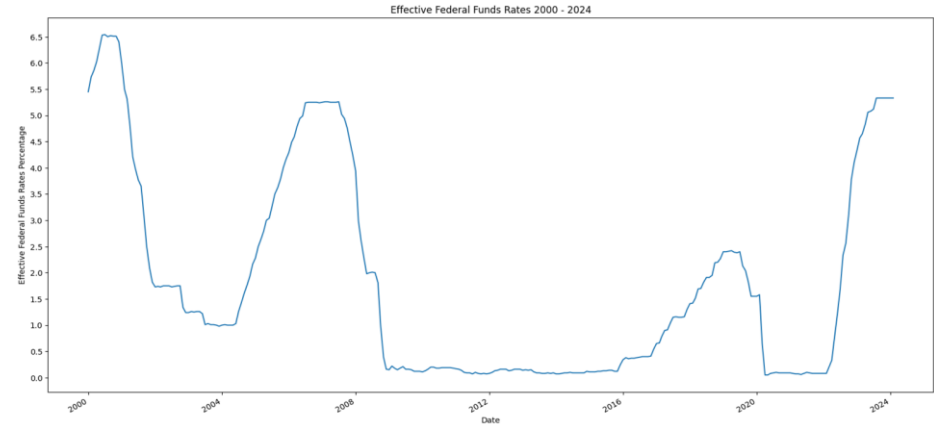


Inflation and Interest Rates: Expectation

- Expect businesses to fail when inflation and interest rates are high
- High inflation leads to increased costs for goods and services, high operating costs
- High inflation leads to high interest rates, businesses less likely to obtain loans, harder to obtain funds

Inflation and Interest Rates: Results

- Inflation and interest rates have a direct relation
- Large amount of startup closures from 2007 - 2012 (recession), inflation and interest rates low during this period
- Not sole factors in causing startup failures, rates low to get economy back on track





Small Business Success and Failure : Expectation

- Strong correlation between economic optimism and the birth rate of startups
- Vulnerability of new ventures to economic downturns and the potential for subsequent recovery periods

Small Business Success and Failure: Results

- Peaks in startup creation during economic booms and sharp declines post-recessions
- The vast number of startups in operation compared to those acquired, IPO'd or closed highlights the challenging journey towards successful exits in the startup ecosystem.

