# The Density of "Tech" Jobs in Texas and its Impact on Local Crime

Years 2012 - 2014
By Chris Jenkins

# Agenda

# Hypothesis

Based on BLS and FBI data, we should be able to find a correlation between the rising density of tech related jobs across Texas, and a decrease in crime for their most populous cities.

# Why Texas?

Texas has become very attractive to the technology sector!!

## 5 Cities Poised To Be The Next Silicon Valley Tech Hub

With record-high prices in Silicon Valley, opportunities to profit from real estate are slim. There are, however, emerging Tech hubs with characteristics similar to Silicon Valley before its real estate boom including:

- Relatively low housing costs

- Low unemployment rates

- Median Tech salaries higher than the median salary for the city's total workforce

- The presence of major Tech companies

- Venture capital funding to spawn new businesses

These Tech hubs – Austin, Dallas, Seattle, Chicago and Miami – are prime environments for real estate investment. Here's a closer look at them:

# Selected Cities

1. **Dallas-Plano-Irving**
2. **Fort Worth-Arlington**
3. **Houston-The Woodlands-Sugar Land**
4. **San Antonio-New Braunfels**
5. **Austin-Round Rock-San Marcos**


Dallas-Fort Worth


Houston


San Antonio


Austin

## Texas Triangle

From Wikipedia, the free encyclopedia

The **Texas Triangle** (also known as **Texaplex**)[2] is one of 11 megaregions in the United States. These are urban areas that are much greater in scale than a metropolitan statistical area (MSA), defined by the US Census Bureau. These regions also are known as megapolitan areas. The Texas Triangle is formed by the four main cities, Houston, Dallas-Fort Worth, San Antonio, and Austin, connected by Interstate 45, Interstate 10, and Interstate 35.
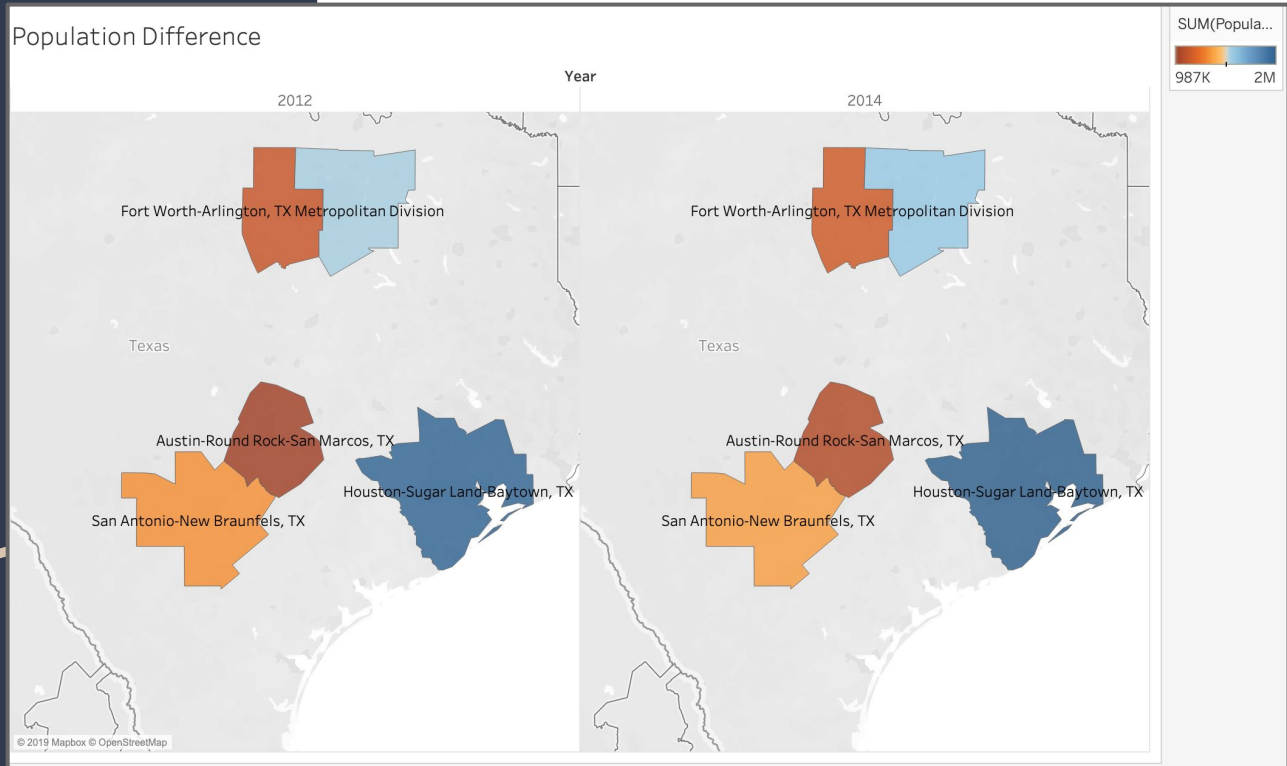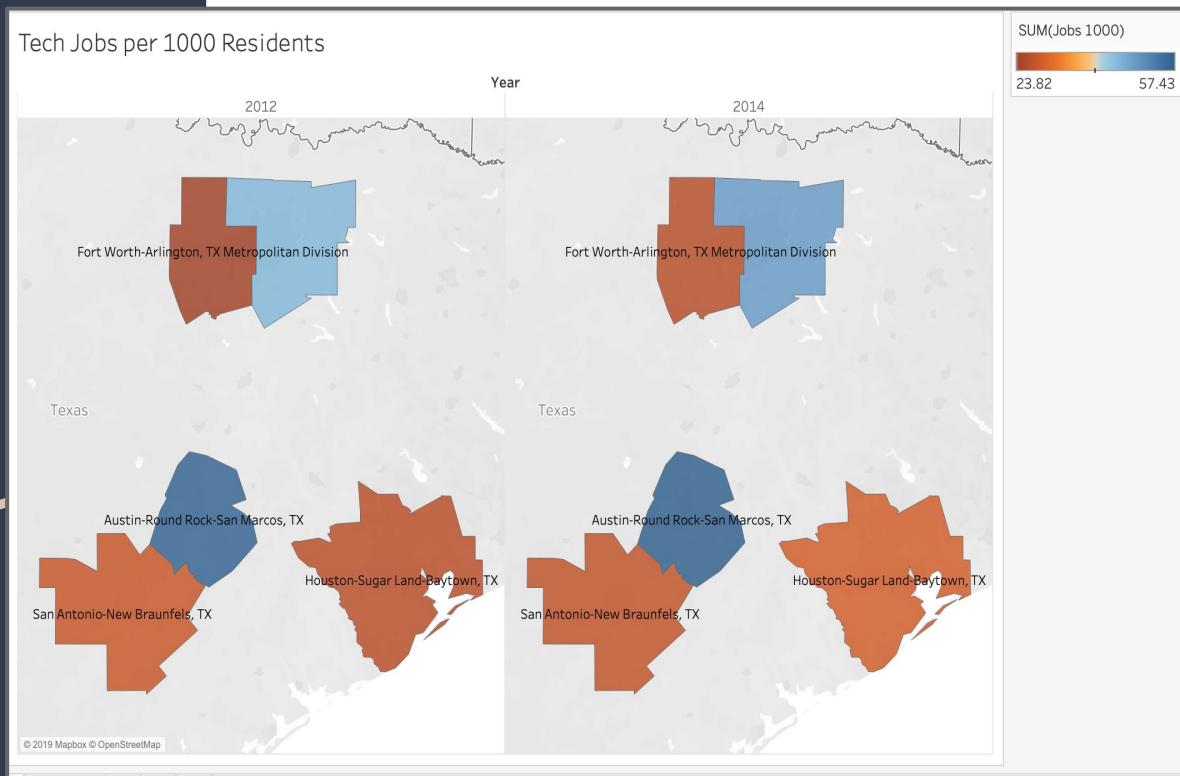
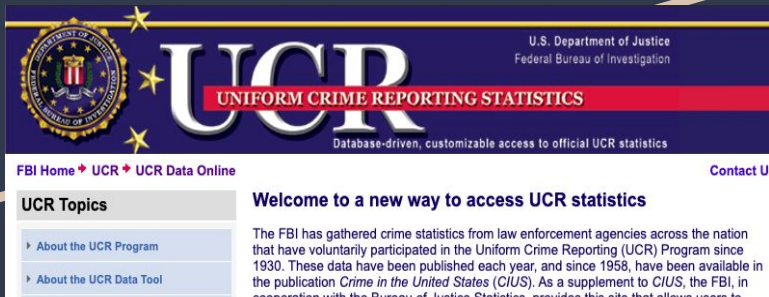# Geographic: Population Difference

# Geographic: Tech Job Difference

# Visual Observations

- While Austin has among one of the smallest populations, we found that they have the highest density of tech jobs per 1000 residents.

- Houston has the highest population, but one of the lowest densities of tech jobs per 1000 residents.

# Tools & Data Sources





**Tools:**

- JupyterLab
- Pandas for EDA
- Seaborn & MatPlotLib for Plotting
- Tableau for Data Visualization

**Data Sources:**

Employment data was sourced from the Bureau of Labor Statistics (BLS) from their Occupational Employment Statistics database. Link here

Crime data was sourced from the FBI's Uniform Crime Reporting Program. Link here
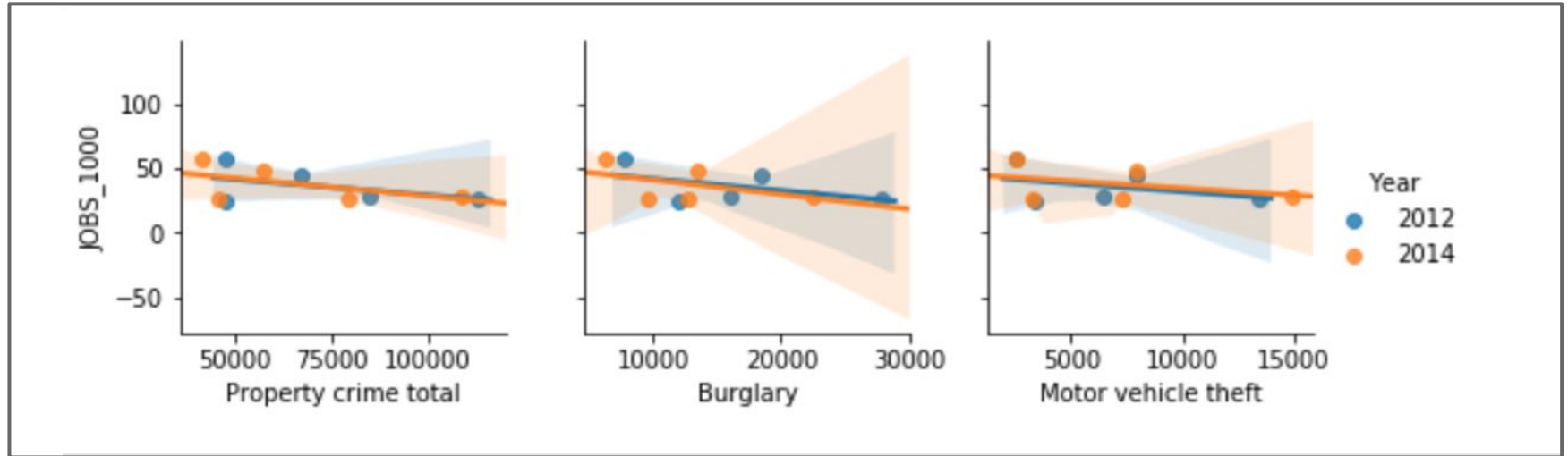
# Observations

- While we found a general correlation between the amount of tech jobs per 1000 residents, and a decrease in crime, we also saw that certain types of crime exhibited stronger correlations.

- Austin & Dallas have almost twice as many tech jobs as the San Antonio, Houston and Ft. Worth regions.

- Generally crime is correlated to population; the strongest correlations were exhibited by violent crime and motor vehicle theft.
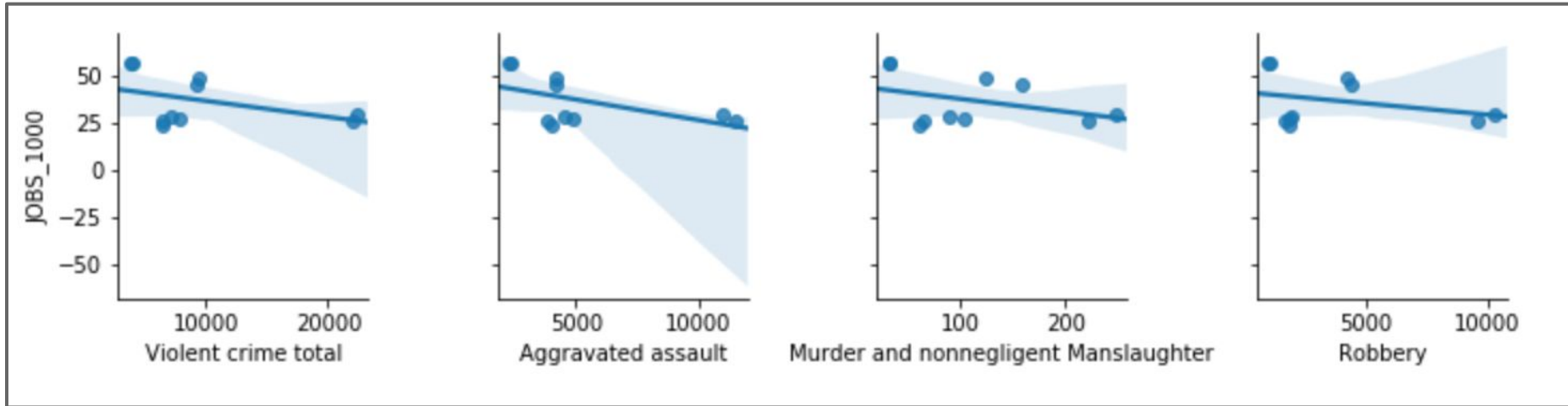
# Observations cont.

- San Antonio was the only region to decrease in both population and tech job density between 2012 and 2014.

- San Antonio was also the only region which experienced an increase in motor vehicle theft during that same period.

| AREA_NAME | Year | TOT_EMP | JOBS_1000 | Population | Motor vehicle theft |
|---|---|---|---|---|---|
| Houston-Sugar Land-Baytown, TX | 2014 | 82490 | 29.010 | 2381241 | 14919 |
| Houston-Sugar Land-Baytown, TX | 2012 | 69940 | 26.486 | 2334617 | 13412 |
| Dallas-Plano-Irving, TX Metropolitan Division | 2014 | 109260 | 48.808 | 1781926 | 7909 |
| Dallas-Plano-Irving, TX Metropolitan Division | 2012 | 95060 | 45.330 | 1739372 | 7941 |
| San Antonio-New Braunfels, TX | 2014 | 24860 | 27.196 | 1493087 | 7314 |
| San Antonio-New Braunfels, TX | 2012 | 24080 | 27.929 | 1440605 | 6459 |
| Fort Worth-Arlington, TX Metropolitan Division | 2014 | 24400 | 26.235 | 1187883 | 3260 |
| Fort Worth-Arlington, TX Metropolitan Division | 2012 | 20950 | 23.821 | 1149396 | 3374 |
| Austin-Round Rock-San Marcos, TX | 2014 | 50920 | 57.434 | 1072746 | 2469 |
| Austin-Round Rock-San Marcos, TX | 2012 | 45910 | 56.500 | 986517 | 2500 |

# Property Crime, Burglary and Motor Theft are the non-violent crimes that align most to an increase in Tech jobs

# Aggravated Assault, Murder and Robbery are the violent crimes which align most to an increase in tech jobs

# Recommendation

The previous slides support my hypothesis that there is a correlation between a decrease in crime and an increase in the density of tech jobs per 1000 residents.

Potential reasons for this include:

- Tech jobs overall provide higher income, and therefore less need for people to commit crimes.
- Developing neighborhoods have demographics favorable for tech roles to expand there (incentives, low rents, proximity to colleges, etc.)

# Potential Issues

1.  Data was only drawn for two individual years, if we pulled more sample data, would we also see the same trends?

2.  We filtered based off of computer and mathematical occupations, are we sure that this includes all of the tech roles we would like to include?

3.  What other non-job related factors should we dig into to ensure that tech jobs have the highest correlation?

# Ideas for Expansion..

- How can we get data from more states to compare and contrast our findings?

- Can we compare tech specific roles to other roles to see if the correlation between increase in jobs and lower crime still remains?

# Q&A?