# **FANG companies and the S&P 500**

## Do FANG stocks consistently outperform the S&P 500 in the short term?

FANG is an acronym for four of the most popular stocks in the technology sector of the stock market, Facebook, Amazon, Netflix, and Google (Alphabet Inc). It’s a common notion that together these four assets outperform the stock market and their peers. But what does this mean for day traders? Is there statistical support to the idea that these assets significantly outperform the market in the short-term? Can day traders blindly rely on FANG stocks to have higher than average returns? According to the institutional investors, FANG is all the rage, but does it work the same way for short term speculators? I had to know for myself.

## A screen shot of a computer Description automatically generatedData Wrangling

In this research report, I tested whether the average daily (geometric mean) returns of FANG (Facebook, Amazon, Netflix, and Google [Alphabet Inc]) were significantly different than the average daily returns of the S&P 500 ETF (SPY) over the past 3 years, January 2016 – December 2019.

I started the data wrangling process by gathering daily ticker data from Pandas financial API module pandas\_datareader. Afterward, I saved the data for each stock ticker and combined them into a data frame to be analyzed using pandas.

Next, I calculated the percent change for SPY. However, in order to calculate percent-change for FANG, I needed to sum the closing price of FANG and broadcast the percent change into a new column. After some quick formatting, voila, I have the data frame I need to complete my analysis.

## Pandas DataFrame: SPY close, FB close, AMZN close, NFLX close, GOOGL close, SPY percent change, FANG percent change.

## Hypothesis Results.Hypothesis Test: T-Test

In order to conduct the hypothesis-test, I created a function to calculate the geometric mean by first calculating a growth rate and forming a new column with the respective rates. Then I compared FANG growth rates to the geometric mean percent change for the S&P 500 ETF.

# Results

In the end, I failed to reject the null hypothesis that the two means are equal. Meaning I found that the daily growth rates for FANG do not have a statistically significant different mean than the S&P 500. So, day traders cannot blindly go long or short in their investments if they wish to outperform the market.

