

**Potential Slides**

**Title Slide**

**Team Members**

**Project Background**

vision,

how we came to our hypothesis, ideas before we agreed to this project

why – easily available datasets, minimal time spent cleaning

team consensus

**Our Process – Data Exploration**

Yahoo Finance instead of API

Create Fridays list, Holidays list

Imported a stock library

Looked @ data by day, looked @ data qtr to qtr, seasonally, cyclically

Looked @ sectors as a group in addition to individually by ticker

Looked at the datapoints to see if they looked to see if normally distributed, then looking @ skewness and kurtosis to see if t test could be used.

Talked to Devang and Jessica about t tests and compatibility

Used means vs. sums; average returns makes more sense than summing returns

**Chart/Table** – 2 Jupyter Notebook Histograms Showing Normal Distribution

**Chart/Table – Box Plots**

**Chart/Table** - Introductory Line Charts with 11 tickers called MTwPlots

**Our Process – Data Cleanup**

Data merges ?

Looked @ periods where the market was closed but was part of NaN values

**Hypotheses & Terminology**

List of 11 Tickers

Range 2: Two-Day Period from Thursday’s closing price to the following Monday’s closing price.

Range 3: Three-Day Period from Monday’s closing price to the following Thursday’s closing price.

Hypothesis #1 – Considering the eleven S&P sectors together as one group, Range 3 has better average returns than the Range 2.

Hypothesis #2 Considering the eleven S&P sectors individually, Range 3 has better average returns than the Range 2.

Hypothesis #1 (H0) – There is no relationship for average returns when investors buy the beginning buy the Monday close and selling the Thursday close (the 3-day period) for the entire dataset of S&P sectors as one group from year 1/1/2000 through 7/19/2019.

Hypothesis #2 (H0) – There is no relationship in terms for average returns for periods when investors buy the Thursday close and sell the Monday close (the 2-day period) vs. buying the Monday close and selling the Thursday close (the 3-day period) for the same dataset of S&P sectors, but taken as individual tickers from year 1/1/2000 through 7/19/2019.

**Jupyter Notebook Snapshot**

Pics of NaN dataframe

**Other Considerations** – Examined the data for situations when the market was closed on Monday or Thursday. NaN values generated because dividing by zero. Used the closing prices for the day before, and keeping those data points or tossing them out was not statistically significant. Chose to not smear the data and tossed them out.

**Chart/Table** - T Test as a group and T Tests for the individual tickers (p values and t statistics)

**Chart/Table** - Bar Chart by ticker (22 Bars Total) for 2 day period and 3 day period in Visuals1 on GitHub

**Chart/Table** – Introductory Chart Showing Average Returns by Day of the Week by Ticker and by Ticker

**Our Findings** – The H0 for Hypothesis #1 should be rejected. Evenly allocating across sectors would have produced a much higher return Mo...Th vs. Th.. What happened with XLRE and XLC which had less data points – statistically no difference.

**Questions/Thank You!**