**Project Title**

“A historical analysis of the price drivers of natural gas prices in the United

States”

**Team Members**

Wilson Aliaga, Carlton Lewis, Velmarini Vasquez, Viralkumar Vaghani

**Project Description/Outline**

Our project will examine the drivers that affect the demand for natural gas in the United States and how the demand for natural gas affects the prices for natural gas.The drivers that we are analyzing are divided into the supply drivers and the demand drivers. We will analyze the data and create charts and graphs that will show the relationships that affect the daily price of natural gas.

**Research Questions to Answer**

Historic Supply

1. What are the most relevant factors affecting the natural gas spot price?
2. What about in the case of future prices?

Supply Drivers questions

1. How does production vary over time in different regions of the country, especially in the counties with natural gas reserves?
2. How does the Storage changes over time based on the facilities (e.g. Pipelines) available in the counties or regions with natural gas reserves?
3. How does Imported gas contribute to the supply overtime?

Demand questions

1. How does temperature changes affect gas demand?
2. How does economic growth influence gas consumption?

**Data Sets to be Used**

The supply drivers include reserves, facilities and infrastructure and long-term natural gas prices. The source for this data will be the EIA (U.S. Energy Information Administration). The demand drivers include the temperature, the economic growth of the United States and consumption by customer group. The sources for these datasets will be FRED (Federal Reserve Economic Data) and the EIA. To get the population information we will use the US Census Database.

**Rough Breakdown of Tasks**

**Data Extraction**

* Retrieve data from various databases
* Clean the data and verify that all cells have a value
* Create dataframes and filter
* Plot the charts for the tables
* Answer questions based on the resulting data
* Below follow some details of the data extraction strategy:

* Demand
  + Obtain and analyze the following data:
    - Residential consumption over time
    - Industrial consumption over time
    - Commercial consumption vs time
    - Exports over time
* Supply
  + Obtain and analyze the following data:
    - Production over time
    - Reserve changes over time.
    - Capacity and storage use of each state of the country overtime, and the create a time dependent Google Heat Map.
    - Imports over time
      * Pipelines and Liquid natural gas terminals (LNG)
* Weather
  + Obtaining information of temperature changes over time
* Economics
  + Plotting gas price changes overtime.

**Model**

Following the inclusions obtained from the data extraction we will attempt to construct model using correlation, linear regression, or time series.