

# MIS 111 – F19 – Applied Business Project 2 – Financial Analysis

---

Name: Bugni, Connor (cbugni)

Project: ABP-2 – Financial Analysis

**E-Integrity Statement:** *By submitting this assignment for grading, I state or affirm the work submitted is my own work and that I did not allow another student to copy my work. I understand copying can include directly giving another student a copy of my solution or simply leaving written or electronic copies of my work where another student may find them.*

## **Task 1: ETL of Transactional Data**

### **1.1. Extract (Downloaded CSV Datafile)**

Date,Open,High,Low,Close,Adj Close,Volume

2018-11-01,122.589996,135.970001,120.940002,135.669998,132.967468,126414800  
2018-12-01,141.880005,142.410004,116.089996,127.070000,124.538780,110482700  
2019-01-01,124.029999,137.720001,120.440002,133.160004,130.507462,119268900  
2019-02-01,133.029999,142.550003,126.550003,137.339996,135.470139,78957600  
2019-03-01,138.860001,139.770004,129.229996,135.490005,133.645340,81109400  
2019-04-01,137.690002,144.770004,134.089996,139.419998,137.521820,83893300  
2019-05-01,139.580002,139.929993,118.739998,119.809998,118.895149,107906500  
2019-06-01,119.910004,137.270004,119.760002,136.289993,135.249313,80059200  
2019-07-01,139.300003,140.619995,128.449997,131.669998,130.664581,90354900  
2019-08-01,131.639999,133.190002,111.750000,119.000000,119.000000,89144500  
2019-09-01,117.900002,133.990005,115.400002,126.309998,126.309998,79539300  
2019-10-01,127.400002,128.500000,117.250000,120.040001,120.040001,11084200  
2019-10-04,119.720001,121.150002,119.349998,121.040001,121.040001,2474888

Task 1.1 – Caterpillar Inc. Trading Data 11/01/2018 – 10/04/2019

(Source:

<https://finance.yahoo.com/quote/CAT/history?period1=1538809200&period2=1567753200&interval=1mo&filter=history&frequency=1mo> Referenced 10/06/2019)

# MIS 111 – F19 – Applied Business Project 2 – Financial Analysis

## 1.2. Data Transformation (Intraday Stock Prices and Shares Traded)

### 1.2 A & B:

CAT - Intraday Stock Prices					CAT - Shares Traded	
Date	Open	High	Low	Close	Date	Volume
11/1/18	122.589996	135.970001	120.940002	135.669998	11/1/18	126414800
12/1/18	141.880005	142.410004	116.089996	127.07	12/1/18	110482700
1/1/19	124.029999	137.720001	120.440002	133.160004	1/1/19	119268900
2/1/19	133.029999	142.550003	126.550003	137.339996	2/1/19	78957600
3/1/19	138.860001	139.770004	129.229996	135.490005	3/1/19	81109400
4/1/19	137.690002	144.770004	134.089996	139.419998	4/1/19	83893300
5/1/19	139.580002	139.929993	118.739998	119.809998	5/1/19	107906500
6/1/19	119.910004	137.270004	119.760002	136.289993	6/1/19	80059200
7/1/19	139.300003	140.619995	128.449997	131.669998	7/1/19	90354900
8/1/19	131.639999	133.190002	111.75	119	8/1/19	89144500
9/1/19	117.900002	133.990005	115.400002	126.309998	9/1/19	79539300
10/1/19	127.400002	128.5	117.25	120.040001	10/1/19	11084200
<b>Max High</b>	141.88	144.77	134.09	139.42	<b>Max High</b>	126,414,800
<b>Min Low</b>	117.9	128.5	111.75	119	<b>Min Low</b>	11,084,200
<b>Range</b>	23.98	16.27	22.34	20.42	<b>Range</b>	115,330,600

*Task 1.2 A&B – Cleaned and Transformed Data Tables*

(Source:

<https://finance.yahoo.com/quote/CAT/history?period1=1538809200&period2=1567753200&interval=1mo&filter=history&frequency=1mo> Referenced 10/06/2019)

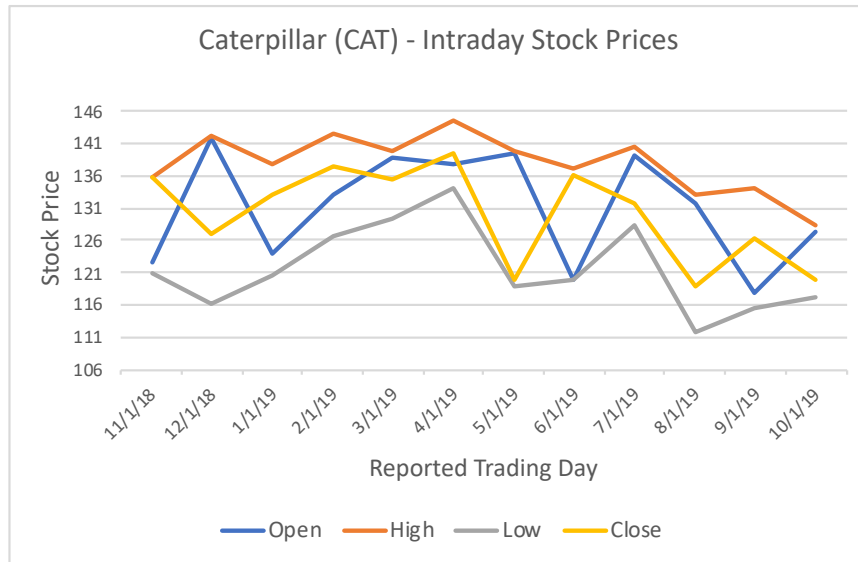
### 1.2C:

Opening Price Maximum Formula: =MAX(B3:B14)

Opening Price Minimum Formula: = MIN(B3:B14)

Opening Price Range Formula: =(MAX(B3:B14))-(MIN(B3:B14))

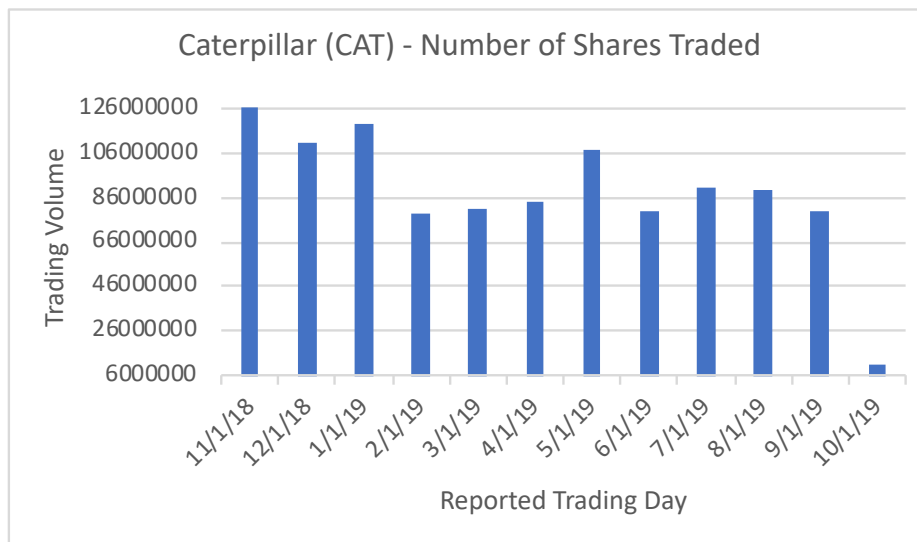
**1.3. Data Visualizations (Intraday Stock Prices and Shares Traded)**



Task 1.3A – Caterpillar Intraday Stock Prices

(Source:

<https://finance.yahoo.com/quote/CAT/history?period1=1538809200&period2=1567753200&interval=1m&filter=history&frequency=1mo> Referenced 10/06/2019)



Task 1.3B – Caterpillar Traded Share Volume

(Source:

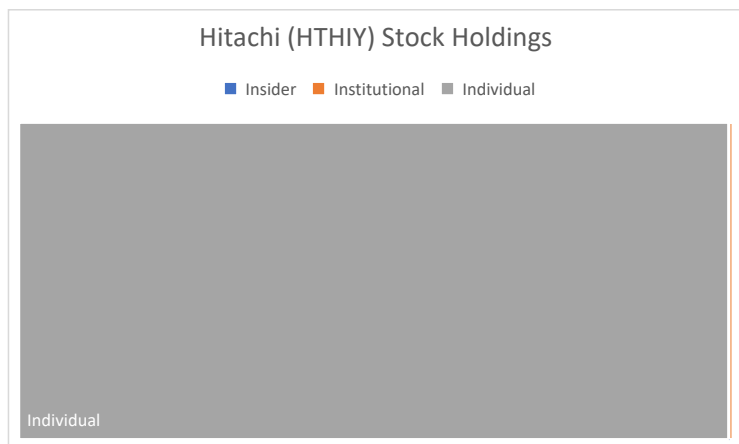
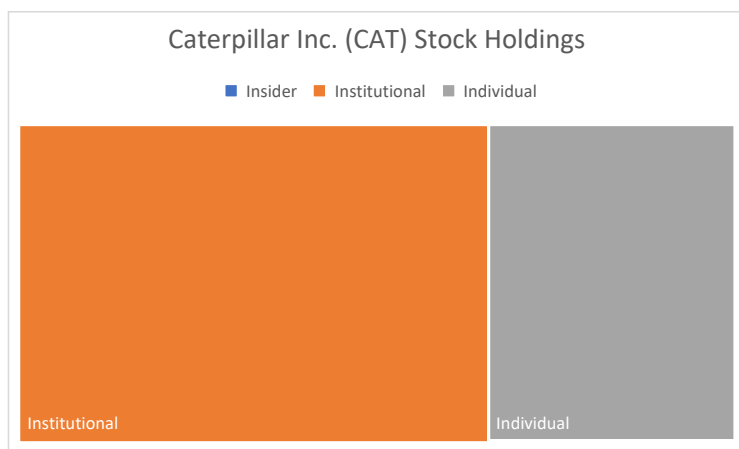
<https://finance.yahoo.com/quote/CAT/history?period1=1538809200&period2=1567753200&interval=1mo&filter=history&frequency=1mo> Referenced 10/06/2019)

## 1.4. Investment Assessment (150 words)

An investment analyst could benefit from creating visualizations of trading data to better predict the behavior of a stock by simplifying the task of seeing trends in the market. Finding a trend in the data is far easier to derive from a visual, and from that trend the analyst can decide whether that stock is trending up or down. Looking at stock price visuals in comparison to trading volume of the stock is further beneficial as a high volume at a certain price may indicate interest or confidence in the stock, or conversely, it may indicate a bearish outlook on the stock. By itself, a trading volume visual would greatly help an investment analyst determine the level of attention on a certain stock and determine whether the market is bullish or bearish on it, depending on an increasing or decreasing trading volume of the stock. In short, visualizations of trading data can help investment analysts determine either upward or downward trends in stocks, and thus better help them make smart investments.

## Section 2: Corporate Ownership Profile

### 2.1. Corporate Ownership Visualization



Class	CAT	DE	HTHIY
Insider	0.17%	0.23%	0.00%
Institutional	65.58%	79.80%	0.41%
Individual	34.25%	19.97%	99.59%

### Task 2.1 – Shareholder Analysis

(Source:

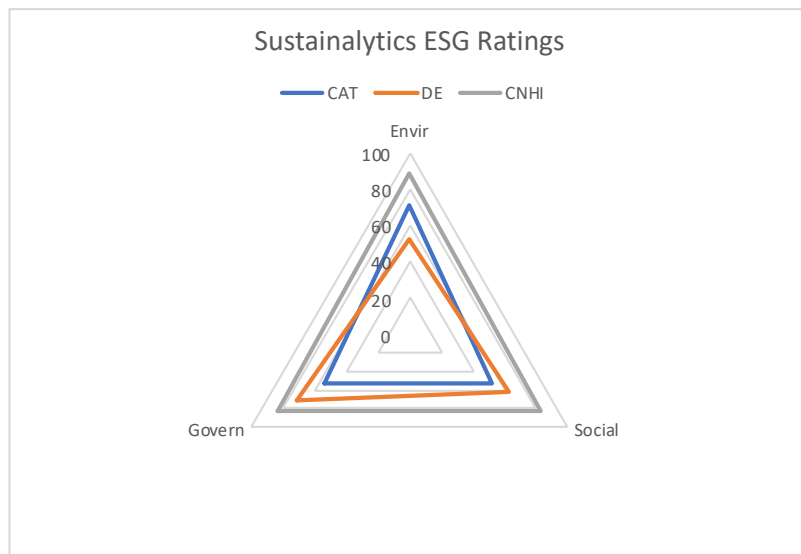
<https://finance.yahoo.com/quote/CAT/key-statistics?p=CAT&.tsrc=fin-srch> Referenced 10/13/2019)

## 2.2. Corporate Ownership Assessment

Although there are many reasons as to why an individual investor may wish to use information on institutional and insider corporate ownership to guide their personal investment strategy, the most obvious of which is to determine confidence level in the business. For instance, if an investor notices the percentage of insider ownership greatly decreasing, or, in other words, employees or executives are selling off large portions of the stock, the investor will not be inclined to invest in the company because not even the people running it have confidence in it. The flip side is also true- if an investor sees insiders purchasing large quantities of the stock then it is likely they have a reason to do so. As this shows promise and confidence in the business, an investor could take this as a sign to jump in on the stock. Ultimately, information on insider and institutional corporate ownership can be used to help an individual investor determine when to get in and out of a stock.

## Section 3: Corporate Sustainability Profile

### 3.1. Sustainability Visualization



Rating	CAT	DE	CNHI
Envir	71	52	89
Social	52	63	83
Govern	54	72	83

Task 3.1 – ESG Ratings Analysis

(Source: <https://finance.yahoo.com/quote/CAT/sustainability?p=CAT&.tsrc=fin-srch> Referenced 10/13/2019)

## 3.2. Sustainability Assessment (150 words)

While there are some investors who try to short stocks, a majority of investors like to invest for the long term. Individual investors looking for long term gains value sustainable businesses, which is exactly what analyzing an ESG ratings chart would help them assess. Understanding a company's ESG ratings can further assist an individual investor who is cross comparing competitors in the same industry, permitting the investor to make the best investment in the best company. Obviously, the companies with the highest ESG ratings are the best at proactively managing their environmental, social and governance issues and are thus best suited to mitigate ESG risks and have the best chance of sustainability. No investor wants to lose money on his/her investment, so being able to have a general idea of how a certain company will perform down the road is crucial to making a profit on an investment. In short, individual investors can use Sustainability ESG ratings to make confident, long term investments in sustainable businesses.

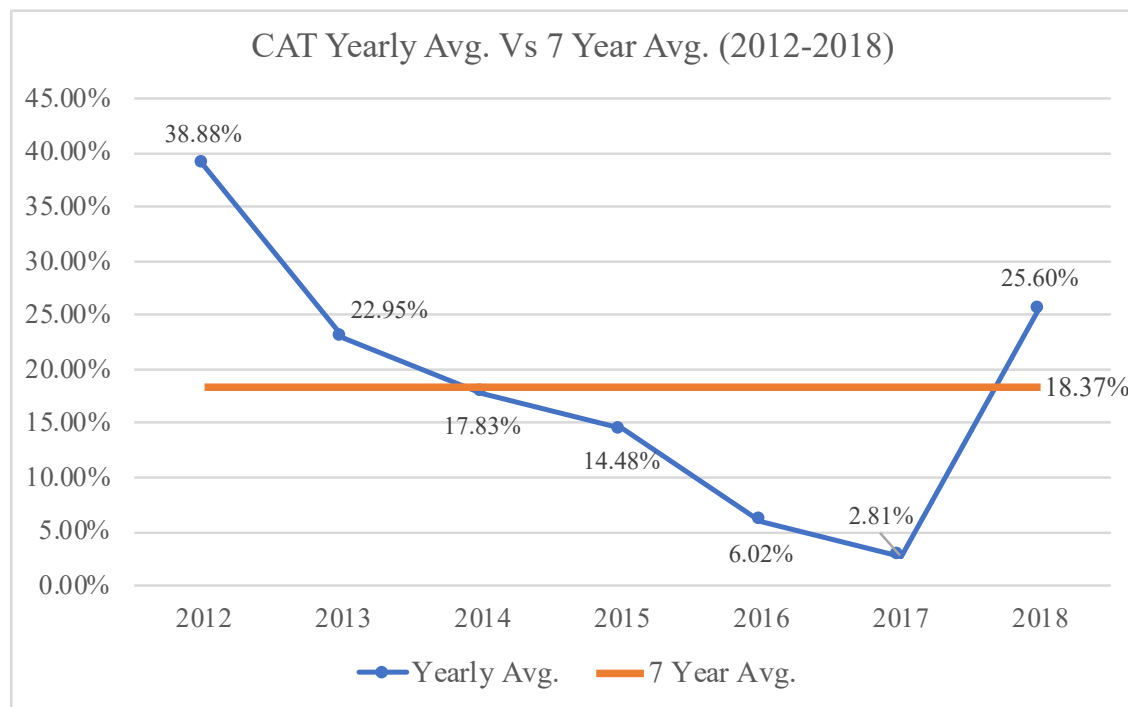
Task 3.2 – Sustainability Assessment (Source: <https://www.investopedia.com/search?q=ESG>  
Referenced 10/13/2019)

## Section 4: Assessing your stock the Warren Buffet Way

### 4.1. Buffet Visualization

Is the company's return on equity above average?

Caterpillar (CAT) ROE (2012-2018)					
Year	Q1	Q2	Q3	Q4	Avg. ROE
2012	38.05%	41.09%	42.23%	34.16%	38.88%
2013	28.50%	23.69%	19.42%	20.19%	22.95%
2014	19.87%	19.27%	19.45%	12.74%	17.83%
2015	15.06%	14.75%	12.66%	15.45%	14.48%
2016	9.65%	8.31%	6.55%	-0.45%	6.02%
2017	-1.01%	0.75%	6.23%	5.27%	2.81%
2018	15.15%	20.99%	25.39%	40.85%	25.60%
Past 7 Years Average ROE =					18.37%
Year	Yearly Avg.	7 Year Avg.			
2012	38.88%	18.37%			
2013	22.95%	18.37%			
2014	17.83%	18.37%			
2015	14.48%	18.37%			
2016	6.02%	18.37%			
2017	2.81%	18.37%			
2018	25.60%	18.37%			



### Task 4.1 – Buffet Visualization

(Source: <https://www.macrotrends.net/stocks/charts/CAT/caterpillar/roe> Referenced 10/14/2019)

### 4.2. Buffet Analysis

Based on the information identified in the research, Caterpillar Inc. meets the Buffet criteria for quality investment. Being that Buffet considers about 12% over the course of seven years to constitute the average return on equity of a given company, the fact that Caterpillar has returned roughly 18.37% from 2012 through 2018 illustrates that CAT has had a higher than average rate of return on equity, which is exactly what Buffet looks for in finding quality investments. With consideration to the visual above, it would also appear that Caterpillar's ROE is on the upswing from previous down years. As the Buffet perspective I elected to use only concerns ROE, Caterpillar Inc. would appear to be a good investment, however, there are other factors to consider. So, while from this perspective CAT is a good investment, further analysis of other criteria should be taken into account before any final decisions are made.