Apple Company Financial Analysis

In [ ]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from matplotlib import style
%matplotlib inline
```

Copying Data to keep the original same

In [ ]:
```
df = pd.read_csv('apple_income_statement.csv').copy()
```

CLEANING DATA

Numbers are in millions of dollars.

In [ ]:
```
df
```

Out[ ]:

	Unnamed: 0	2012	2013	2014	2015	2016	2017	2018	2019	2020
0	Cash	0	0	0	0	0	0	0	0	0
1	Cash & Equivalents	5490	6081	7341	6460	7168	8261	7857	8284	9352
2	Short Term Investments	29	14	0	0	0	0	1	0	0
3	Cash and Short Term Investments	5519	6095	7341	6460	7168	8261	7858	8284	9352
4	Accounts Receivable - Trade, Net	8831	8326	7699	6677	5919	7376	8767	8484	7317
5	Total Receivables, Net	8831	17089	16726	15668	14441	16133	17417	17820	16780
6	Total Inventory	15547	12625	12205	9700	8614	10018	11529	11266	11402
7	Other Current Assets, Total	11253	1626	1777	18	62	60	34	84	0
8	Total Current Assets	42138	38335	38867	33508	31967	36244	38603	39193	39464
9	Property/Plant/Equipment, Total - Gross	29932	0	31572	31977	31940	31538	29781	29841	29874
10	Accumulated Depreciation, Total	-13471	0	-14995	-15887	-16618	-17383	-16207	-16313	-16870
11	Property/Plant/Equipment, Total - Net	16461	17075	16577	16090	15322	14155	13574	13528	13004
12	Long Term Investments	272	272	257	246	249	243	0	0	0
13	Other Long Term Assets, Total	3796	2463	3292	4328	4216	3484	3774	4159	4747
14	Total Assets	88970	84896	84681	78342	74704	76962	78509	78453	78324
15	Accounts Payable	6753	6560	6515	5023	4614	6487	7051	5957	6128
16	Notes Payable/Short Term Debt	5287	3679	4708	6967	7303	4837	5723	5166	2015
17	Current Port. of LT Debt/Capital Leases	7104	7352	6793	5877	6662	6194	5830	6210	9149
18	Other Current liabilities, Total	4837	4641	4089	3321	3382	3668	3727	3665	3524
19	Total Current Liabilities	29415	27297	27877	26242	26132	26931	28218	26621	25717
20	Long Term Debt	27679	26719	27699	25092	22750	23410	24544	26153	25896
21	Total Long Term Debt	27752	26719	27784	25169	22818	23847	25000	26281	25999
22	Total Debt	40143	37750	39285	38013	36783	34878	36553	37657	37163
23	Other Liabilities, Total	14221	10002	12194	12046	12541	12418	11211	10922	11230
24	Total Liabilities	71438	64085	67935	63533	61567	63265	64470	63865	62993
25	Common Stock, Total	4481	4709	5016	5238	5277	5593	5827	5935	6230
26	Retained Earnings (Accumulated Deficit)	0	0	0	0	0	0	0	0	0
27	Unrealized Gain (Loss)	67	83	83	37	32	8	-15	20	54

	Unnamed: 0	2012	2013	2014	2015	2016	2017	2018	2019	2020
28	Other Equity, Total	-6500	-3981	-6514	-2072	-2071	-1200	-1669	-1587	-942
29	Total Equity	17532	20811	16746	14809	13137	13697	14039	14588	15331
30	Total Liabilities & Shareholders' Equity	88970	84896	84681	78342	74704	76962	78509	78453	78324

Renaming the first column to Year

In [ ]:
```
df.rename(columns={"Unnamed: 0": "Year"}, inplace=True)
df.head()
```

Out[ ]:

	Year	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
0	Cash	0	0	0	0	0	0	0	0	0	0
1	Cash & Equivalents	5490	6081	7341	6460	7168	8261	7857	8284	9352	9254
2	Short Term Investments	29	14	0	0	0	0	1	0	0	0
3	Cash and Short Term Investments	5519	6095	7341	6460	7168	8261	7858	8284	9352	9254
4	Accounts Receivable - Trade, Net	8831	8326	7699	6677	5919	7376	8767	8484	7317	8477

In [ ]:
```
df.set_index('Year', inplace=True)
```

Changing Rows into Column and Column into Rows

In [ ]:
```
df = df.transpose()
df.head()
```

Out[ ]:

Year	Cash	Cash & Equivalents	Short Term Investments	Cash and Short Term Investments	Accounts Receivable - Trade, Net	Total Receivables, Net	Total Inventory	Other Current Assets, Total	T Curr Ass
2012	0	5490	29	5519	8831	8831	15547	11253	42
2013	0	6081	14	6095	8326	17089	12625	1626	38
2014	0	7341	0	7341	7699	16726	12205	1777	38
2015	0	6460	0	6460	6677	15668	9700	18	33
2016	0	7168	0	7168	5919	14441	8614	62	31

5 rows × 31 columns

In [ ]:
```
df.reset_index(inplace=True)
```

In [ ]:
```
df.rename(columns={"index": "year"},  inplace=True)
```

Checking for Null Values

In [ ]:
```
df.isnull().sum()
```

Out[ ]:
```
Year
year                                        0
Cash                                        0
Cash & Equivalents                          0
Short Term Investments                      0
Cash and Short Term Investments             0
Accounts Receivable - Trade, Net            0
Total Receivables, Net                      0
Total Inventory                             0
Other Current Assets, Total                 0
Total Current Assets                        0
Property/Plant/Equipment, Total - Gross     0
Accumulated Depreciation, Total             0
Property/Plant/Equipment, Total - Net       0
Long Term Investments                       0
Other Long Term Assets, Total               0
Total Assets                                0
Accounts Payable                            0
Notes Payable/Short Term Debt               0
Current Port. of  LT Debt/Capital Leases    0
Other Current liabilities, Total            0
Total Current Liabilities                   0
Long Term Debt                              0
Total Long Term Debt                        0
Total Debt                                  0
Other Liabilities, Total                    0
Total Liabilities                           0
Common Stock, Total                         0
Retained Earnings (Accumulated Deficit)     0
Unrealized Gain (Loss)                      0
Other Equity, Total                         0
Total Equity                                0
Total Liabilities & Shareholders' Equity    0
dtype: int64
```

Before starting Analysis checking if the Balance Sheet is comeplete or not

i.e. Assets = Liaibilites + Equity if answers is more than or less than zero the balance sheet has errors

In [ ]:
```
df['Total Assets'] - df['Total Liabilities & Shareholders\' Equity']
```

Out[ ]:
```
0    0
1    0
2    0
3    0
4    0
5    0
6    0
7    0
8    0
9    0
dtype: int64
```

Data is Cleaned !

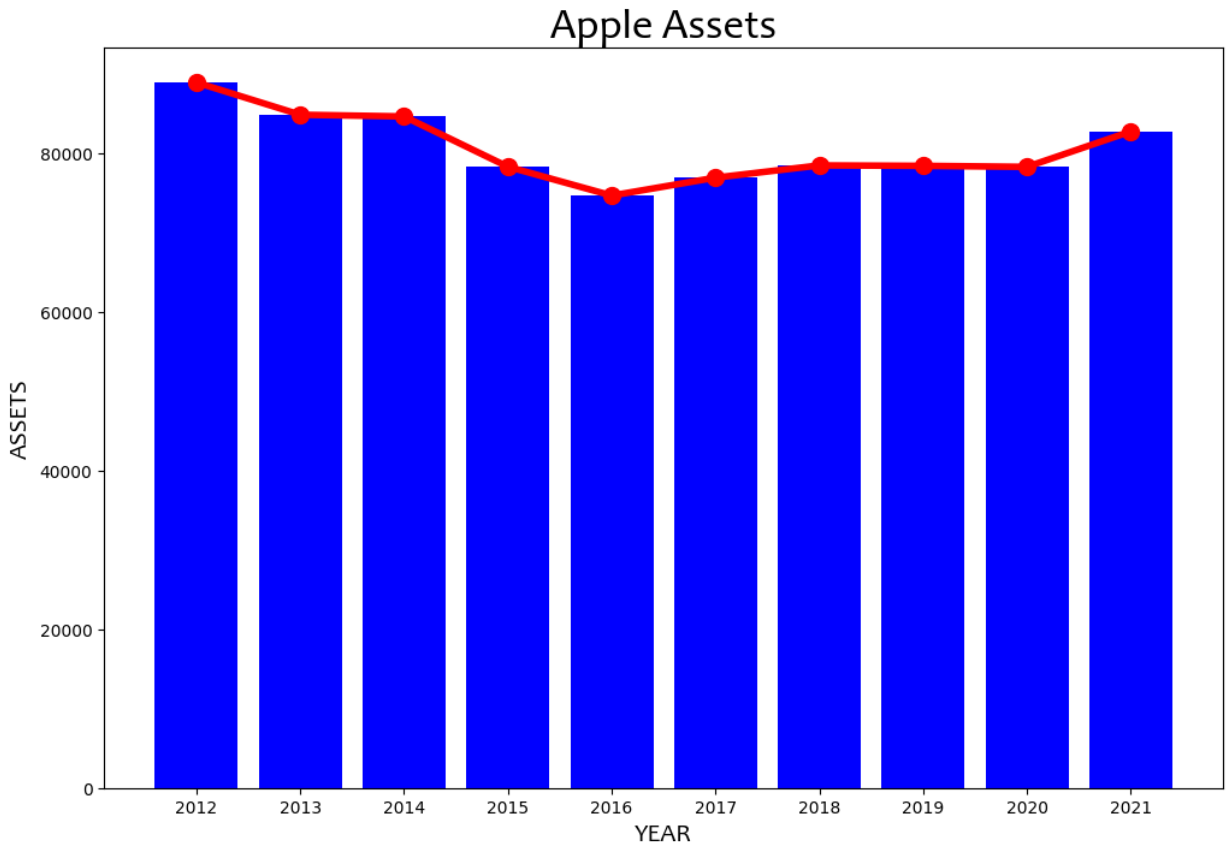
In [ ]:
```
df.to_csv("Apple_balance_sheet_cleaned.csv")
```

DATA VISUALIAZTION

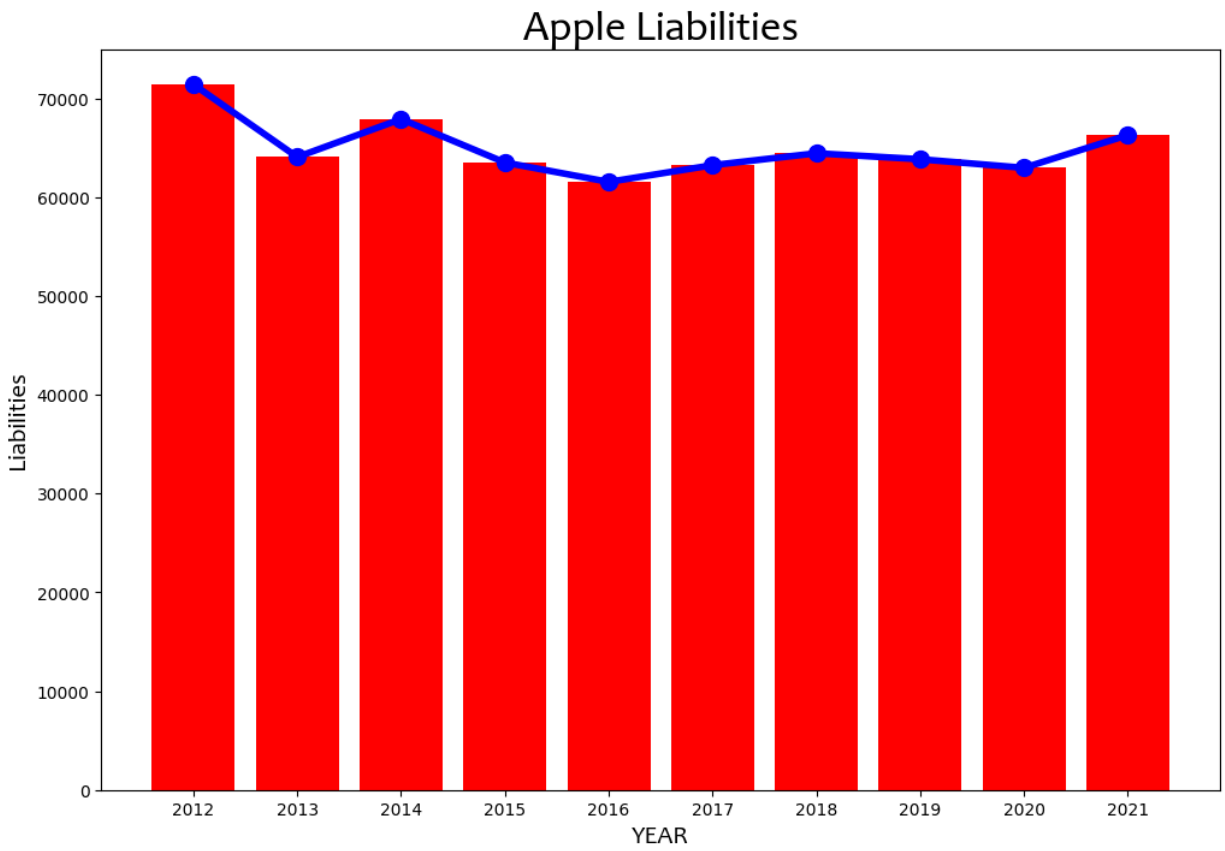
Investors Look at growing Assets and Equity along with decreasing Liabilities as a sign of a good Investment

Ploting Graphs for Assest, Equity & Liabilites to see their trend

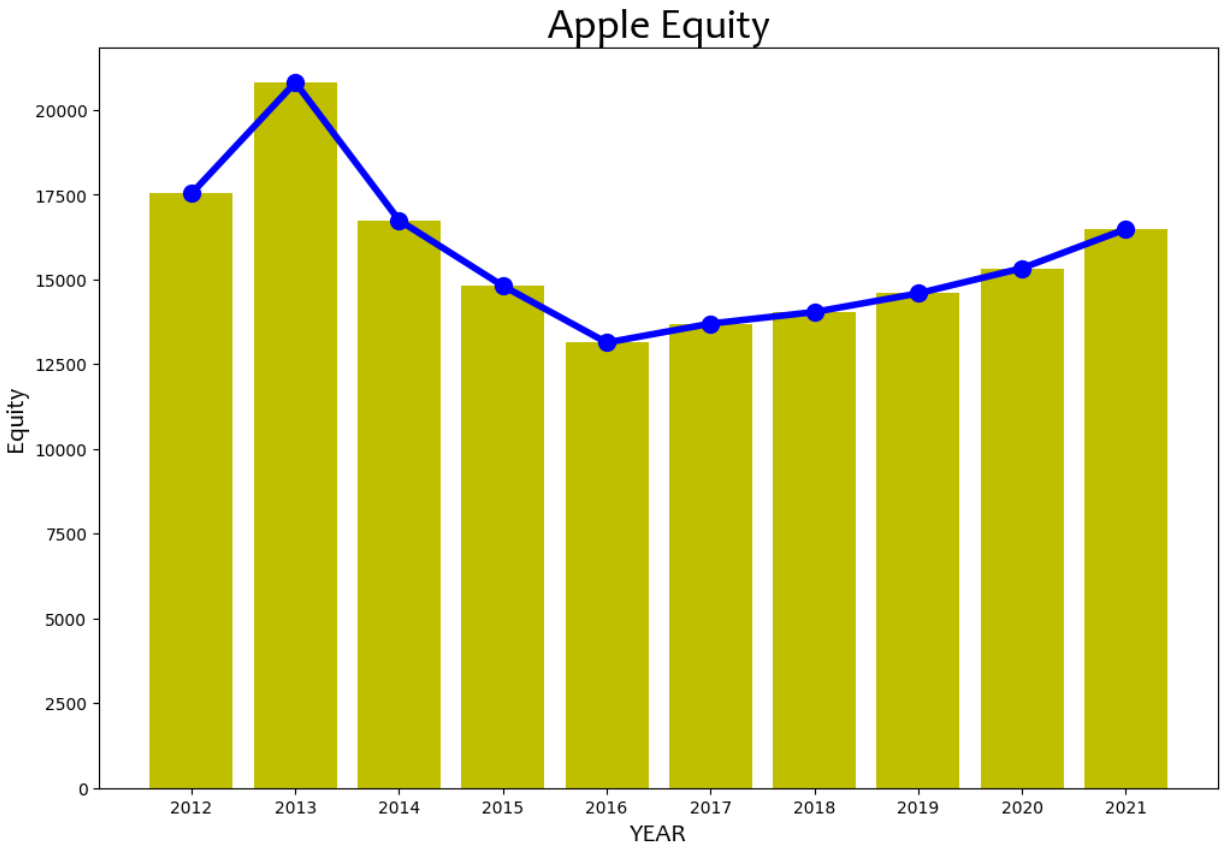
In [ ]:
```
style.use("seaborn-v0_8-bright")
plt.figure(figsize=(12,8))

plt.title("Apple Assets", fontname= "Candara", fontsize= 25)
plt.bar(df['year'], df['Total Assets'], color='b')
plt.plot(df['year'], df['Total Assets'], marker='o', color='r', ms=10, linewidth=4)
plt.xlabel("YEAR", fontname= "Candara", fontsize=15)
plt.ylabel("ASSETS", fontname= "Candara", fontsize=15)

plt.show()
```



In [ ]:
```
style.use("seaborn-v0_8-bright")
plt.figure(figsize=(12,8))

plt.title("Apple Liabilities", fontname= "Candara", fontsize= 25)
plt.bar(df['year'], df['Total Liabilities'], color='r')
plt.plot(df['year'], df['Total Liabilities'], marker='o', color='b', ms=10, linewidth=
plt.xlabel("YEAR", fontname= "Candara", fontsize=15)
plt.ylabel("Liabilities", fontname= "Candara", fontsize=15)

plt.show()
```



In [ ]:
```
style.use("seaborn-v0_8-bright")
plt.figure(figsize=(12,8))

plt.title("Apple Equity", fontname= "Candara", fontsize= 25)
plt.bar(df['year'], df['Total Equity'], color='y')
plt.plot(df['year'], df['Total Equity'], marker='o', color='b', ms=10, linewidth=4)
plt.xlabel("YEAR", fontname= "Candara", fontsize=15)
plt.ylabel("Equity", fontname= "Candara", fontsize=15)

plt.show()
```



Apple Companys Assets and Equity have seen decline since 2016, growing post 2016

In [ ]:
```
df.head()
```

Out[ ]:

	Year	year	Cash	Cash & Equivalents	Short Term Investments	Cash and Short Term Investments	Accounts Receivable - Trade, Net	Total Receivables, Net	Total Inventory	Other Current Assets, Total
0	2012	0	5490	29	5519	8831	8831	15547	11253	
1	2013	0	6081	14	6095	8326	17089	12625	1626	
2	2014	0	7341	0	7341	7699	16726	12205	1777	
3	2015	0	6460	0	6460	6677	15668	9700	18	
4	2016	0	7168	0	7168	5919	14441	8614	62	

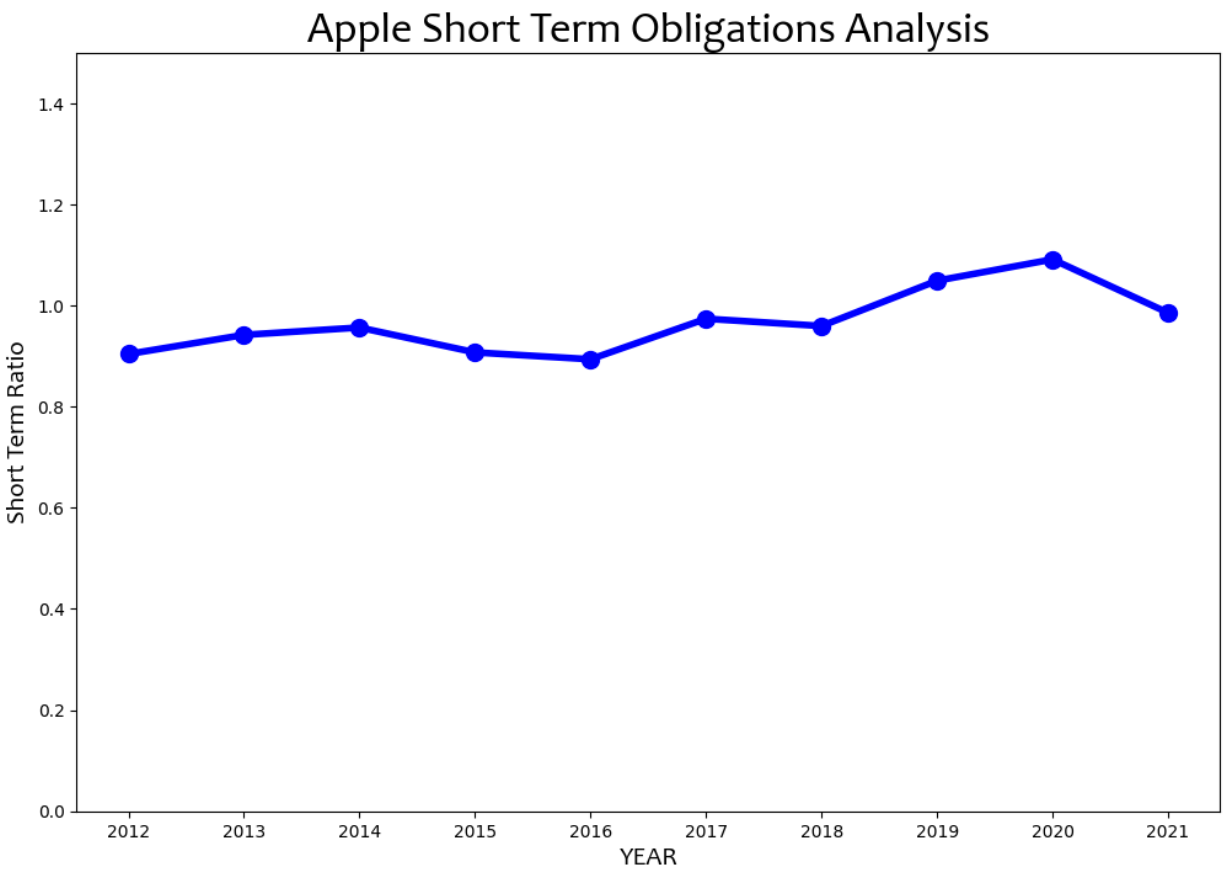
5 rows × 32 columns

We will further analyze Apple's Financial Strength by using Financial Ratios

In [ ]:
```
ratio = (df['Total Current Assets'] -df['Total Inventory'] )/df['Total Current Liabili
```

Measuring the money available to meet current, short-term obligations of a company. If the value is above Zero, then the company is struglling to pay its short term debt, if below zero, the company has enough resources to pay its current debt.

In [ ]:
```
style.use("seaborn-v0_8-bright")
plt.figure(figsize=(12,8))

plt.title("Apple Short Term Obligations Analysis", fontname= "Candara", fontsize= 25)
plt.plot(df['year'], ratio, marker='o', color='b', ms=10, linewidth=4)
plt.xlabel("YEAR", fontname= "Candara", fontsize=15)
plt.ylabel("Short Term Ratio", fontname= "Candara", fontsize=15)
plt.ylim(ymin=0)
plt.ylim(ymax=1.5)

plt.show()
```



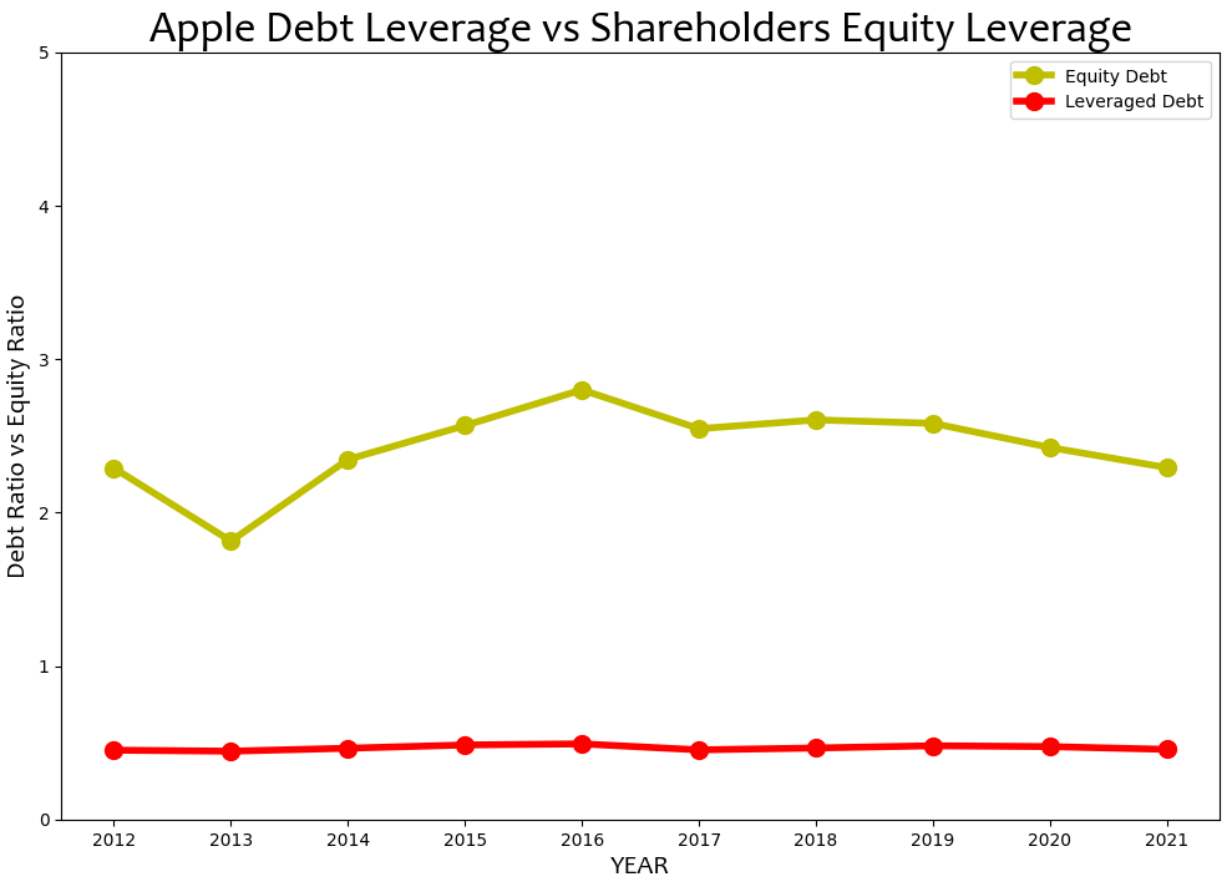
Apple seems to be doing okay

In [ ]:
```
ratio_2 = df['Total Debt'] /df['Total Equity']
ratio_1 = df['Total Debt'] /df['Total Assets']
```

Companies often use short and long-term debt to finance business operations. Leverage ratios measure how much debt a company has

In [ ]:
```
style.use("seaborn-v0_8-bright")
plt.figure(figsize=(12,8))

plt.title("Apple Debt Leverage vs Shareholders Equity Leverage", fontname= "Candara",
plt.plot(df['year'], ratio_2, marker='o', color='y', ms=10, linewidth=4, label= "Equit
plt.plot(df['year'], ratio_1, marker='o', color='r', ms=10, linewidth=4, label= "Lever
plt.xlabel("YEAR", fontname= "Candara", fontsize=15)
plt.ylabel("Debt Ratio vs Equity Ratio", fontname= "Candara", fontsize=15)
plt.ylim(ymin=0)
plt.ylim(ymax=5)
```

```
plt.legend()

plt.show()
```



The above Graph explains that APPLE mainly runs or leverages its business on Equity Debt or in other words it takes less from creditors to run its business and more from its shareholders.