



# Stock Analysis

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# Stock Data Description

THE LIVE DATA STOCK VALUES OF 3 MAJOR COMPANIES MICROSOFT, APPLE AND TESLA. THEIR LIVE DATA HAVE BEEN EXTRACTED FROM THE WEBSITE OF YAHOO FINANCE. THE DATASET CONTAINS THEIR STOCK VALUES BETWEEN 2018 AND 2023 ON DAILY BASIS. THE DATASET ALSO CONTAIN S&P 500 VALUES AS WELL, DURING THE SAME TIME. HERE THE PERCENTAGE CHANGE IN STOCK VALUES HAS BEEN CALCULATED FOR EACH STOCK AND IS PRESENTED IN THE TABLE AS %CHANGE VARIABLE.



# Objectives

01

Make a comparative descriptive statistics on the price value of each stock displaying charts to show the trend of each stock between (2018 – 2023)

02

Include charts like scatter plot, histogram etc to show the price trend of each of the stock value.

03

Compare the stock values of each company with the SP\_500 company.

04

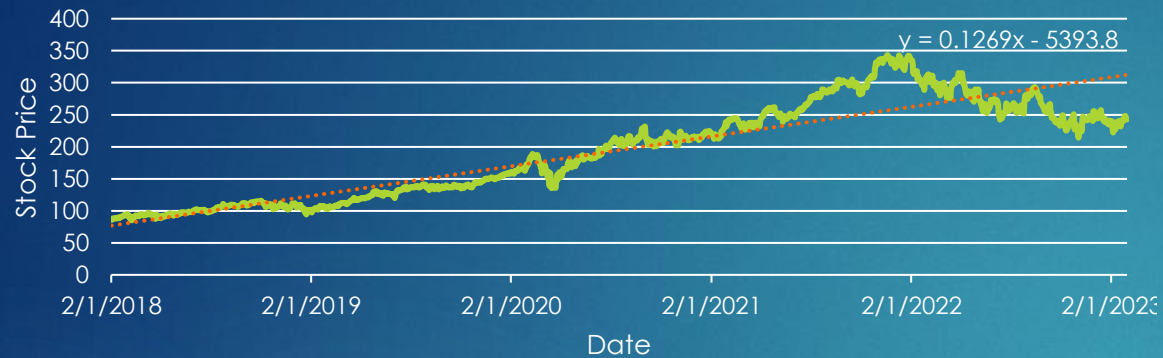
A regression analysis of each stock value





# MSFT Regression Analysis

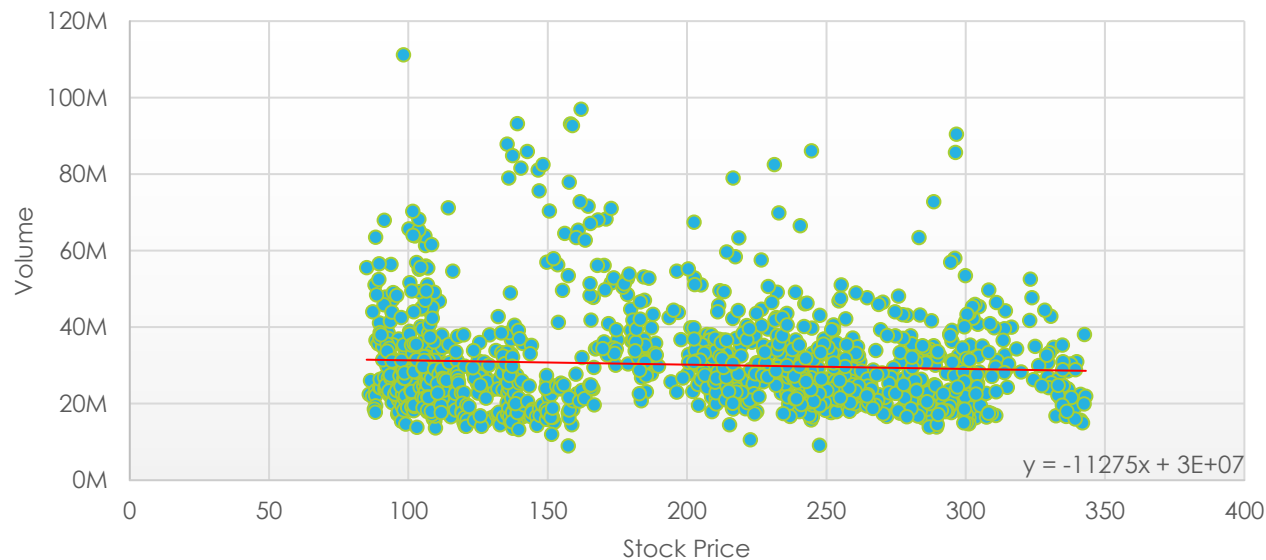
MSFT Stock price trend



MSFT Stock Price Frequency



Stock Price vs Volume



From **2018 to 2023**, Microsoft experienced a **strong upward trend** in its stock price.

**Higher Trading Volume** over the years  
Indicates increased interest in the stock.

# MSFT Regression Statistics

## SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.0663
R Square	0.0044
Adjusted R Square	0.0036
Standard Error	74.8882
Observations	1229

## ANOVA

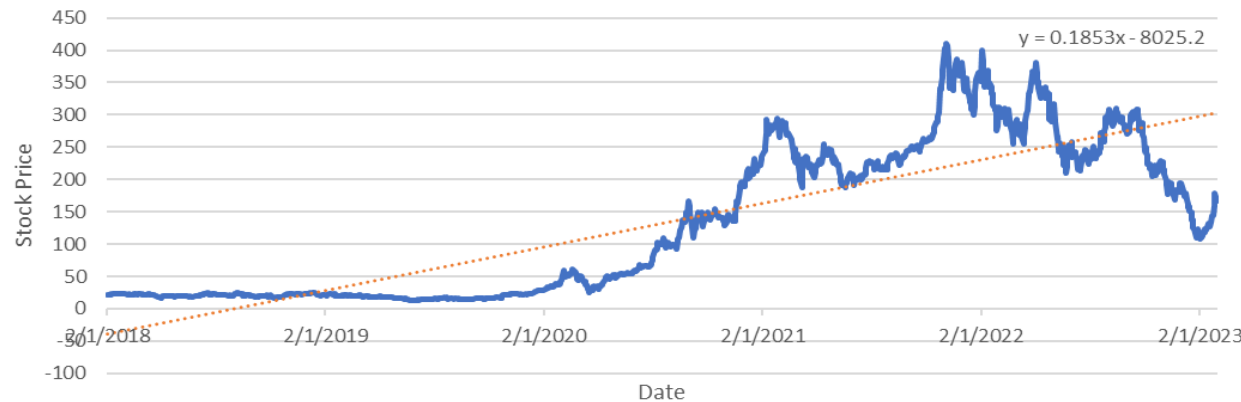
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	30410.49	30410.49	5.42	0.02
Residual	1227	6881310.73	5608.2402		
Total	1228	6911721.22			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	204.48	5.47277	37.36251	0.00000	193.73946	215.21351	193.73946	215.21351
22483800	-3.9E-07	0.00000	-2.32862	0.02004	0.00000	0.00000	0.00000	0.00000

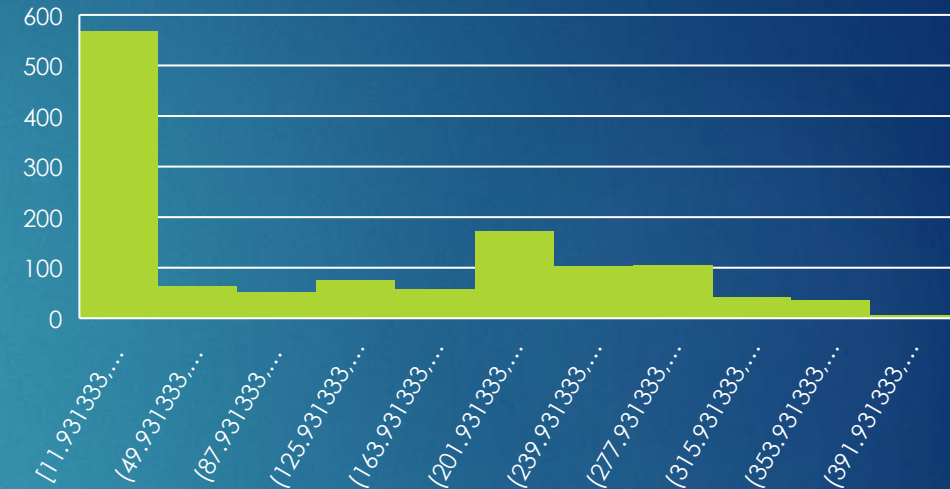


# Tesla Regression Analysis

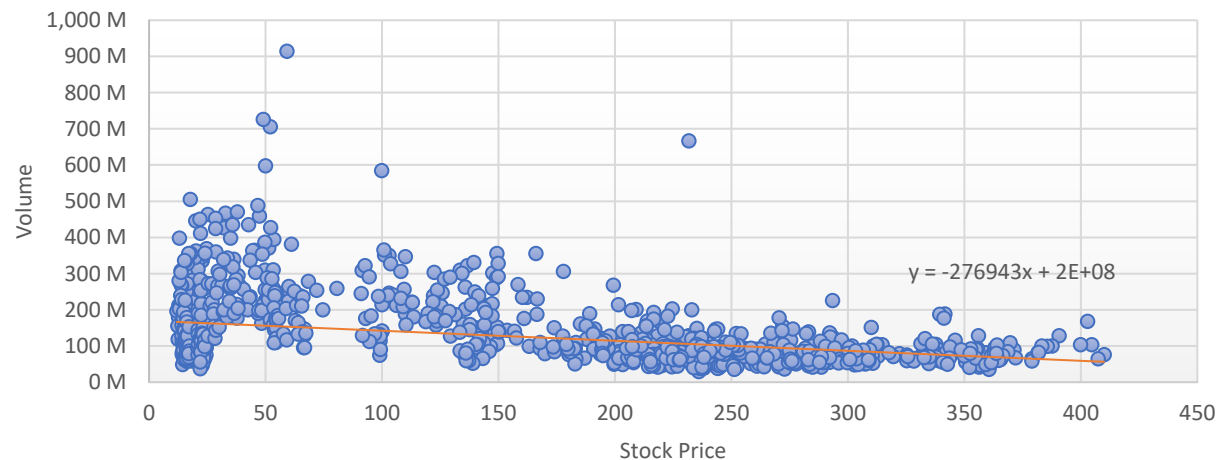
Tesla Stock Price Trend



Tesla Stock Price Frequency



Stock Price Vs Volume



From **2018 to 2023**, Tesla experienced a **strong upward trend** in its stock price.

**Higher Trading Volume** over the years Indicates increased interest in the stock.



# Tesla Regression Statistics

## SUMMARY OUTPUT

<i>Regression Statistics</i>	
Multiple R	0.36
R Square	0.13
Adjusted R Square	0.13
Standard Error	111.04
Observations	1229

## ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	2284207.46	2284207.46	185.27	2.12539E-39
Residual	1227	15127623.94	12328.95		
Total	1228	17411831.4			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	194.0980949	5.60	34.65	5.5E-184	183.11	205.09	183.11	205.09
65283000	-4.74178E-07	3.48367E-08	-13.61145948	2.13E-39	-5.42524E-07	-4.05832E-07	-5.42524E-07	-4.05832E-07

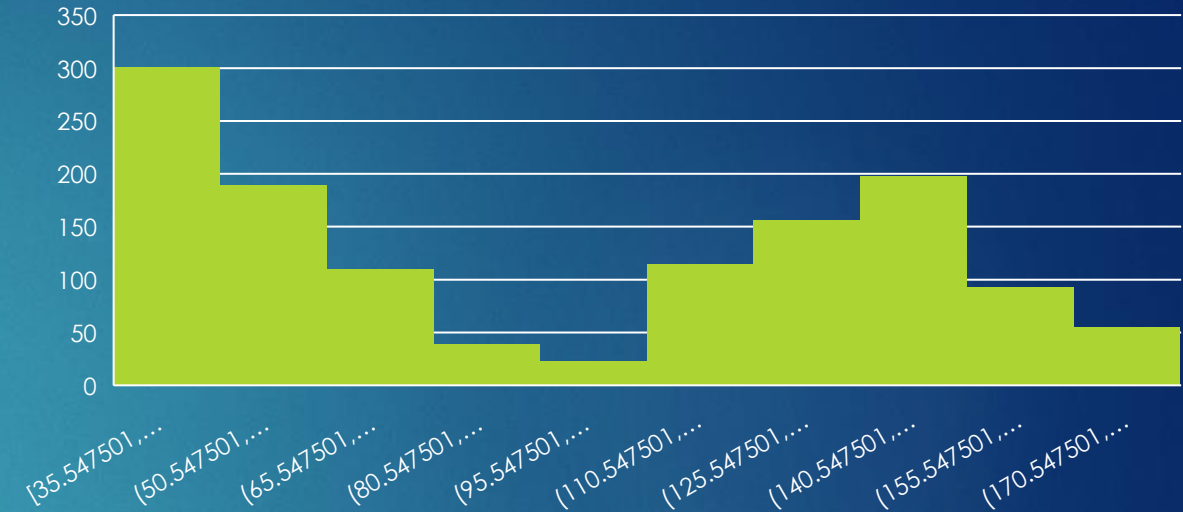


# Apple Regression Analysis

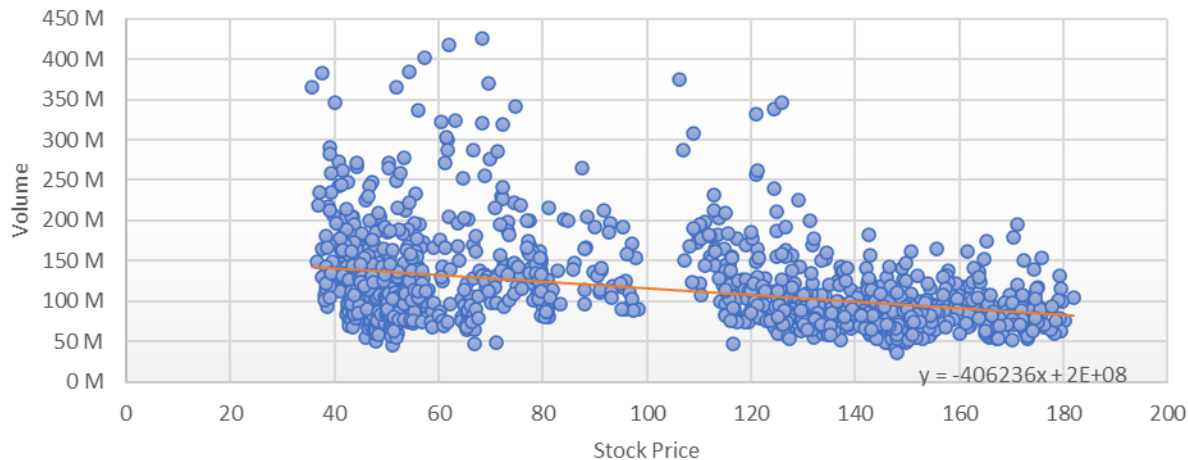
Apple Stock Price Trend



Apple Stock Price Frequency



Stock Price Vs Volume



From **2018 to 2023**, Tesla experienced a **strong upward trend** in its stock price.

**Higher Trading Volume** over the years  
Indicates increased interest in the stock.

# Apple Regression Statistics

## SUMMARY OUTPUT

### Regression Statistics

Multiple R	0.33
R Square	0.11
Adjusted R Square	0.11
Standard Error	43.86
Observations	1229

### ANOVA

	df	SS	MS	F	Significance F
Regression	1	279329.51	279329.51	145.20	1.10194E-31
Residual	1227	2360398.66	1923.72		
Total	1228	2639728.18			

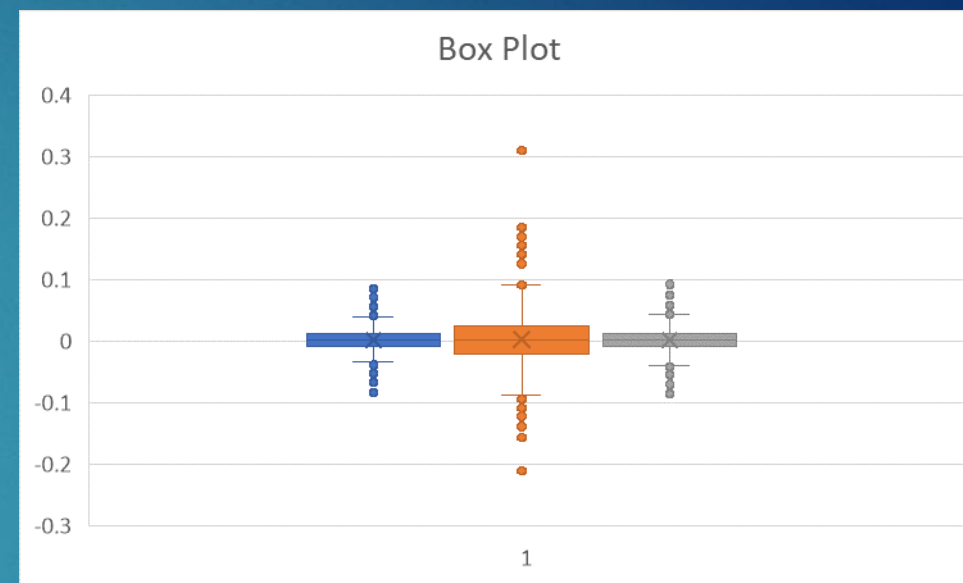
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	129.30	2.95	43.86	1.519E-253	123.51	135.08	123.51	135.08
102223600	-2.7E-07	2.3E-08	-1.2E+01	1.1E-31	-3.2E-07	-2.3E-07	-3.2E-07	-2.3E-07



# Comparison Chart

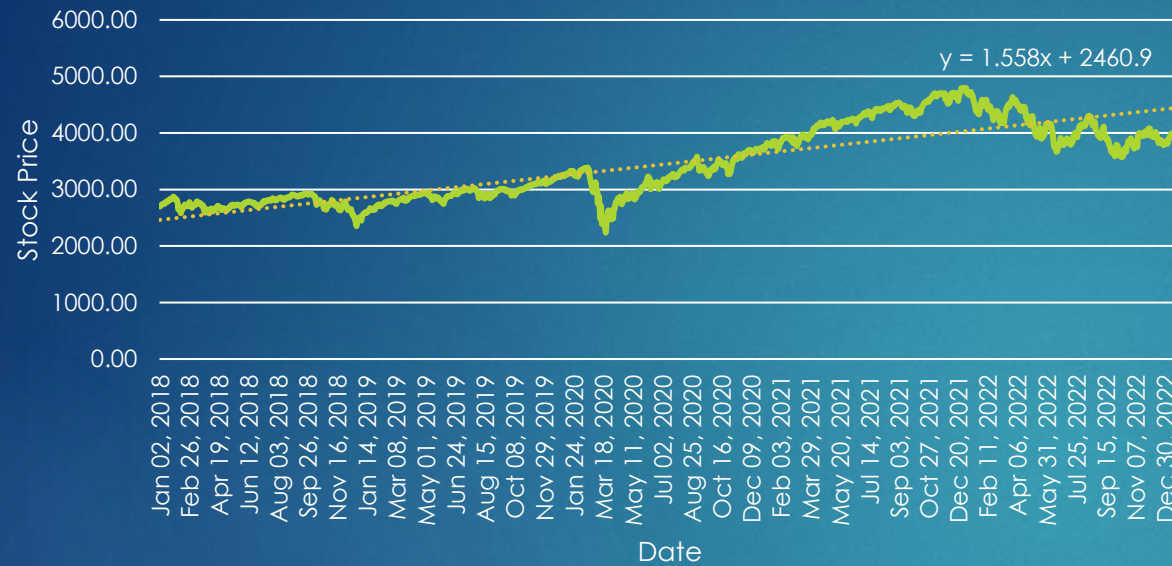


Microsoft and Apple stock have the same trend compared to Tesla which is more volatile, has very high price fluctuations and more outliers.

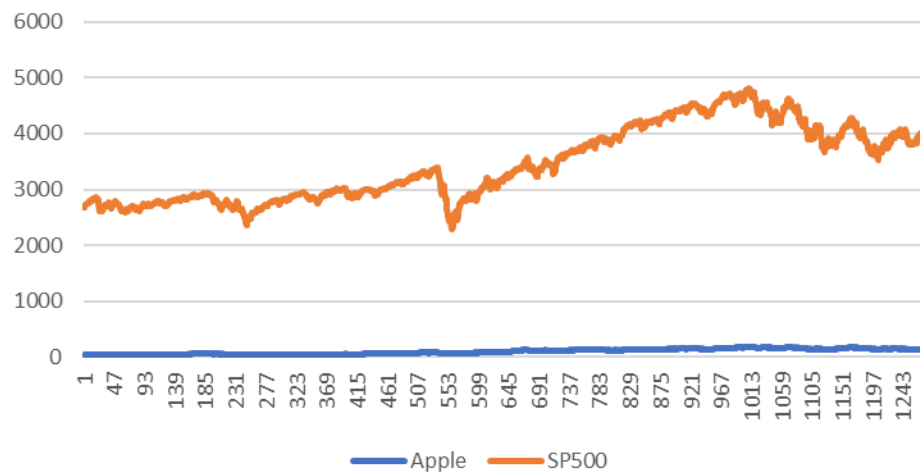


# SP500 trend and comparison

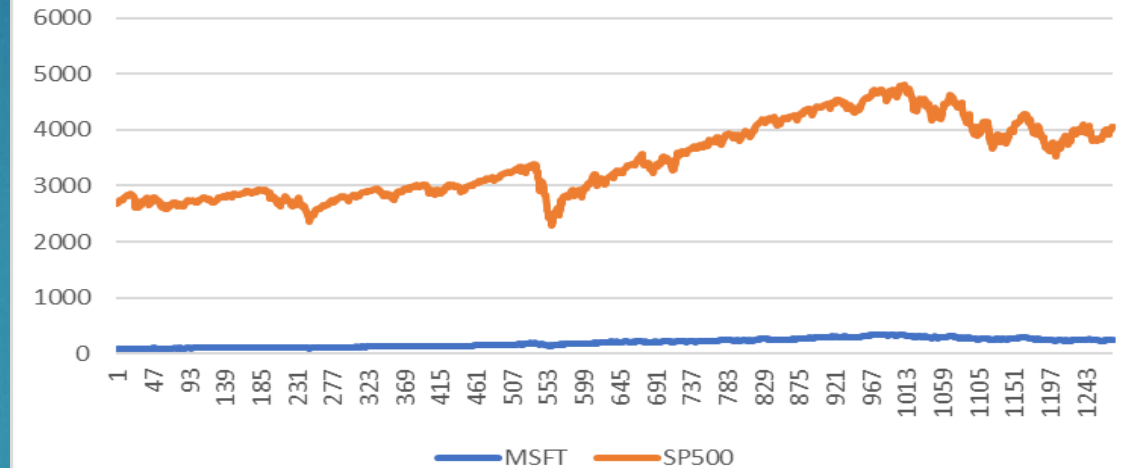
## SP500 Stock Price Trend



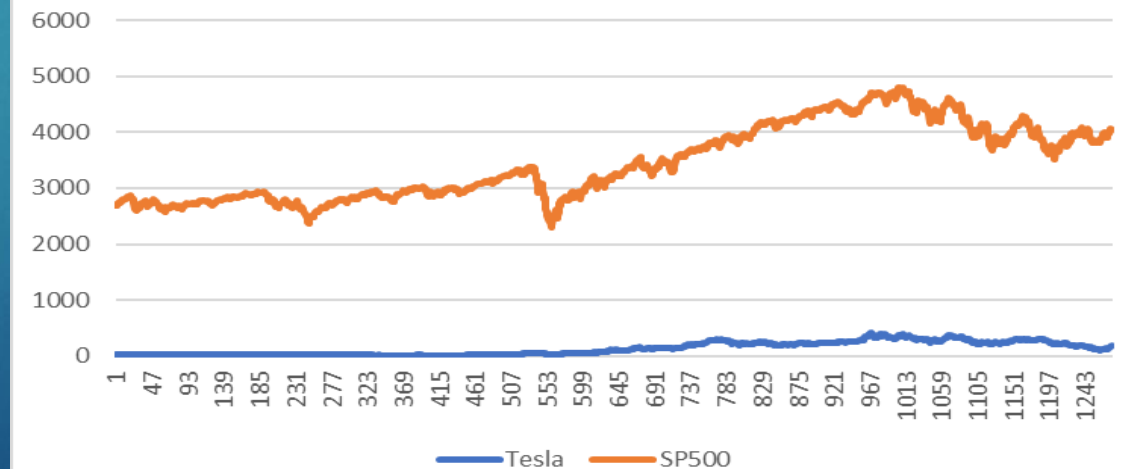
## Apple SP500



## MSFT VS SP500



## Tesla VS SP500



# Conclusion

- Descriptive Statistics: Showed that Tesla exhibited the most volatility, while Microsoft and Apple displayed steady growth. • Visualizations: Demonstrated consistent upward trends for all stocks, with significant fluctuations for Tesla. • Regression Analysis: Highlighted overall positive growth, with Tesla having the steepest trend.
- Microsoft and Apple provide stable growth with moderate risk, suitable for long-term investors. Tesla offers high-reward potential but comes with significant risks and price volatility. S&P500 represents the overall market's stability, making it a safer option with lower returns compared to individual stocks.