

Data Analytics Project

The effect of revenue level on market capitalization of US listed firms

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Summary



Rationale

- **Market capitalization** and **total revenue** are selected to further investigate the effect of company size on overall financial performance of a firm.



Source of data

- NASDAQ stocks as of 31 Dec 2022
- 3094 observations included



Objective

- To examine how strong is the relationship of market capitalization and total revenue



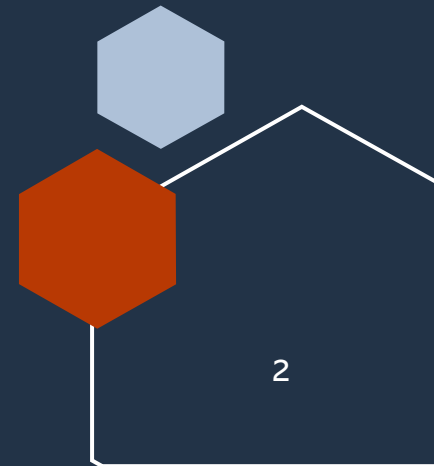
Hypothesis

- Company with larger revenue has a larger market capitalisation



Methodology

- Regression model
 - Dependent variable (Y): Market Capitalization (in log)
 - Independent variable (X): Total Revenue (in log)



Regression Model

- Regress Market Capitalization (in log) (Y) on Total Revenue (in log) (X)

Regression results:

Regression Statistics	
Multiple R	0.69863678
R Square	0.48809335
Adjusted R Square	0.487927845
Standard Error	0.865809434
Observations	3095

- Multiple R of 0.699 indicates a moderate positive relationship between the independent and dependent variables

R^2 value of 48.8% of the variation in total revenue is explained by the market capitalization

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	1634.399	1634.399	2949.117	0.00
Residual	3093	1714.139	0.554199		
Total	3094	3348.538			

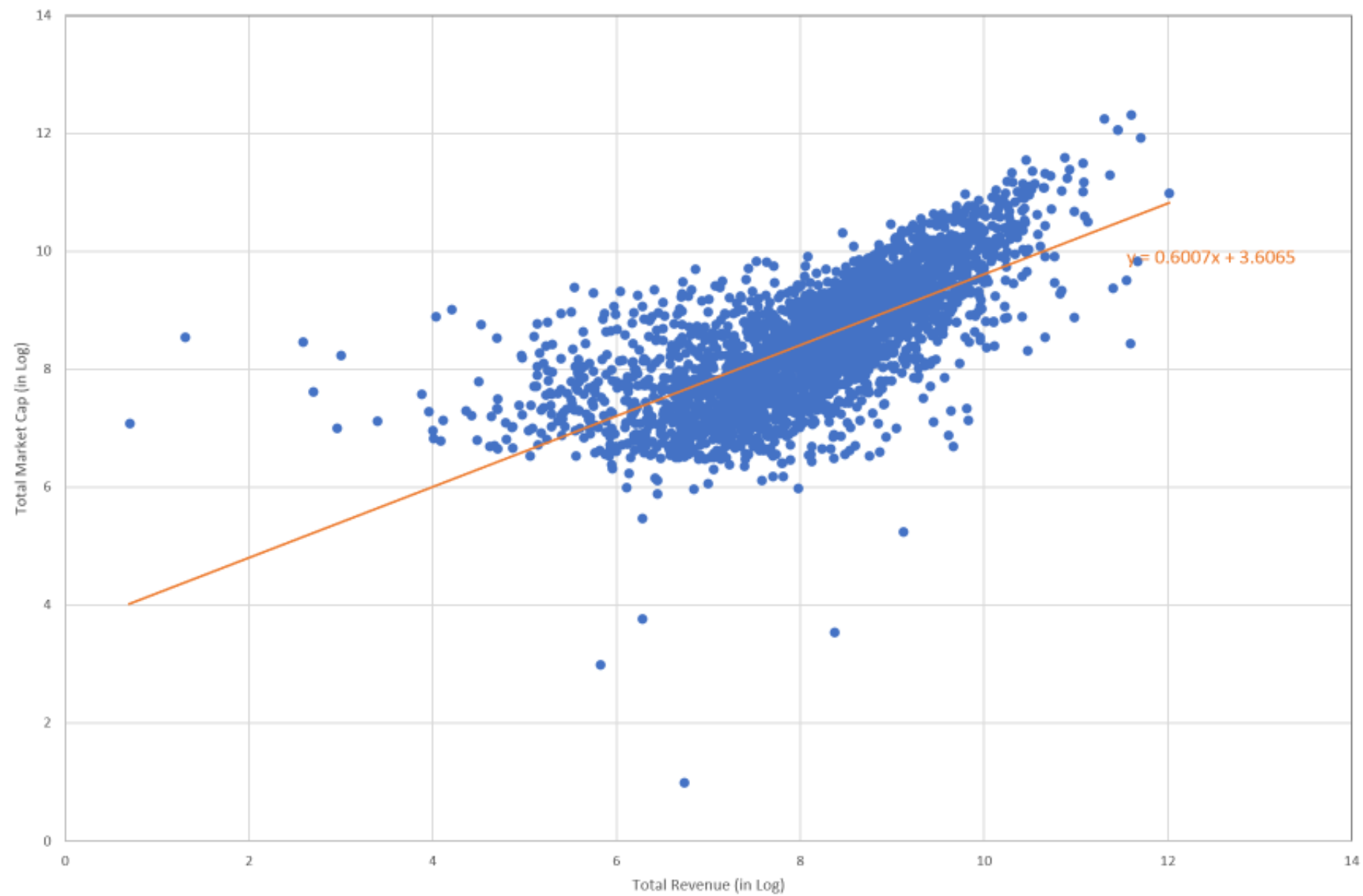
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	3.606456919	0.091000374	39.63123	3.8E-278
Total Revenue (Log)	0.600706257	0.011061554	54.30578	0

- The result is statistically significant as it gives a significance level that is less of 0.05.

- The regression line is:
- $y = \text{Market Capitalization (log transformed)} = 3.6065 + (0.6007) * \text{Total Revenue (log transformed)}$

➔ Total revenue is positively correlated with market capitalization at 5% significance level.

Linear Regression of Market Capitalization (in Log) on Total Revenue (in Log)



A decorative graphic on the left side of the slide featuring several hexagons. There is a large orange hexagon in the center, a light blue hexagon above it, a white outline hexagon to its left, and a small orange hexagon below it.

Conclusion

- Regression model 3 shows strong positive correlation between X and Y variables at 5% significance level as expected.
- Hence, it is concluded that firms with higher revenue generation are correlated with larger market capitalisation.
- The high R square also supports the use of revenue as a key variable to estimate valuation of a company.
- This is just a starting point, the research can be extended to compare the level of correlation for different industries, different market etc.

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