

Presented by Pious Khemka and Vishesh Shukla

Exploring Stock Performance

Analyzing Leading Entertainment Giants



Purpose

To unravel the complexities of the financial markets.

Target Audience

Investors, traders, and financial professionals.

Approach

Rigorous data analysis and statistical techniques.

Objective

Provide actionable insights for informed investment decisions.





Companies



Paramount+

NETFLIX



COMCAST

Disney®



NETFLIX



COMCAST

About the Data

- Source : Yahoo Finance library
- Past 1 year Stock prices of 4 companies in the Entertainment sector.
- Data includes columns like
 - Company name
 - Opening price
 - Highest price
 - Lowest price
 - Closing price
 - Adjusted Closing price
 - Volume of trade
- Data is already clean.



Sample data for The Walt Disney Company:

2×8 DataFrame

Row	timestamp	open	high	low	close	adj_close	volume	company_name
	DateTime	Any	Any	Any	Any	Any	Any	String
1	2023-01-03T14:30:00	88.98	89.97	87.83	88.97	88.681	14997100	The Walt Disney Company
2	2023-01-04T14:30:00	90.0	92.75	89.36	91.98	91.6812	14957200	The Walt Disney Company

Glimpse of the Data

Sample data for Netflix, Inc.:

2×8 DataFrame

Row	timestamp	open	high	low	close	adj_close	volume	company_name
	DateTime	Any	Any	Any	Any	Any	Any	String
1	2023-01-03T14:30:00	298.06	298.39	288.7	294.95	294.95	6764000	Netflix, Inc.
2	2023-01-04T14:30:00	298.24	311.14	295.51	309.41	309.41	9345100	Netflix, Inc.

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Questions

- What was the change in price of the stock over time?
- What was the daily return of the stock on average?
- What was the moving average of the various stocks?
- What was the correlation between different stocks?
- How much value do we put at risk by investing in a particular stock?
- How can we attempt to predict future stock behavior? (Predicting the closing price stock price of NFLX using LSTM)

Exploratory Data Analysis

Descriptive Statistics:

8x7 DataFrame

Row	variable	mean	min	median	max	nmissing	eltype
	Symbol	Union...	Any	Any	Any	Int64	DataType
1	timestamp	2023-01-03T14:30:00	2023-07-04T13:30:00	2023-12-29T14:30:00	2023-12-29T14:30:00	0	DateTime
2	open	135.095	10.72	63.11	494.8	0	Any
3	high	136.879	10.81	63.625	500.89	0	Any
4	low	133.419	10.51	62.715	489.25	0	Any
5	close	135.167	10.7	63.22	495.02	0	Any
6	adj_close	134.883	10.666	62.7828	495.02	0	Any
7	volume	1.28714e7	1404700	1.16634e7	72171000	0	Any
8	company_name		Comcast Corporation		The Walt Disney Company	0	String

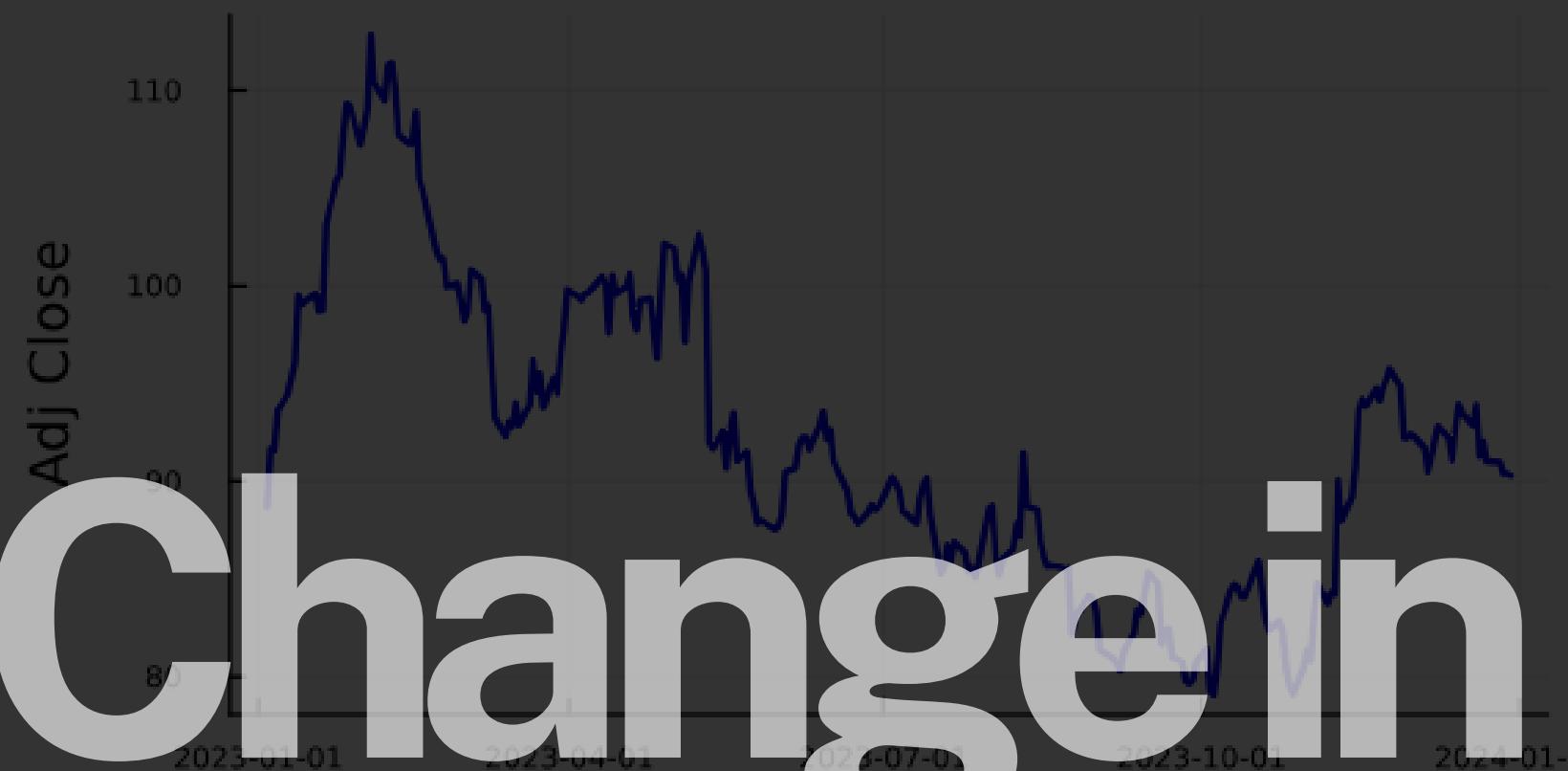
Descriptive Statistics

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Closing Price of The Walt Disney Company



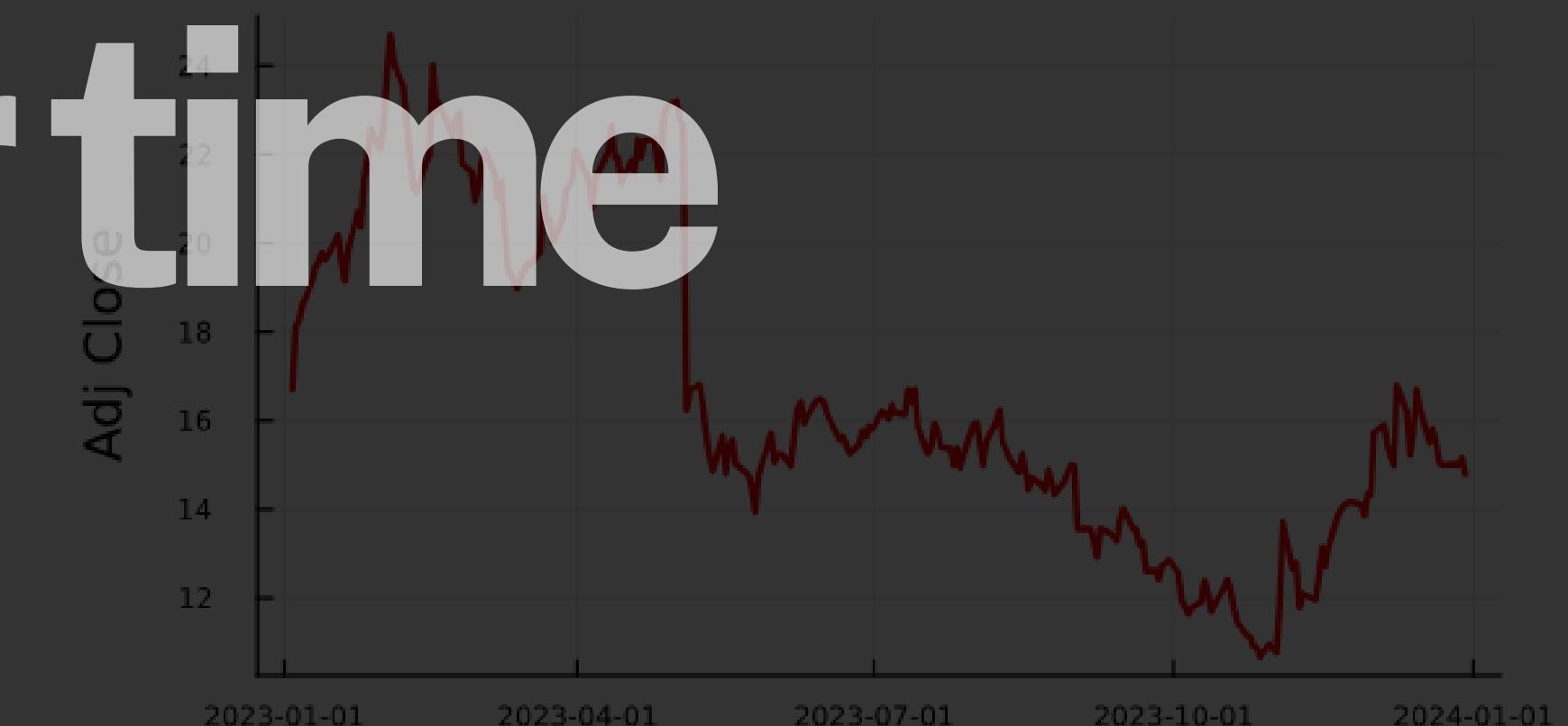
Closing Price of Netflix, Inc.



Closing Price of Comcast Corporation



Closing Price of Paramount Global



Change in Stock Price
over time

Closing Price of The Walt Disney Company



Closing Price of Netflix, Inc.



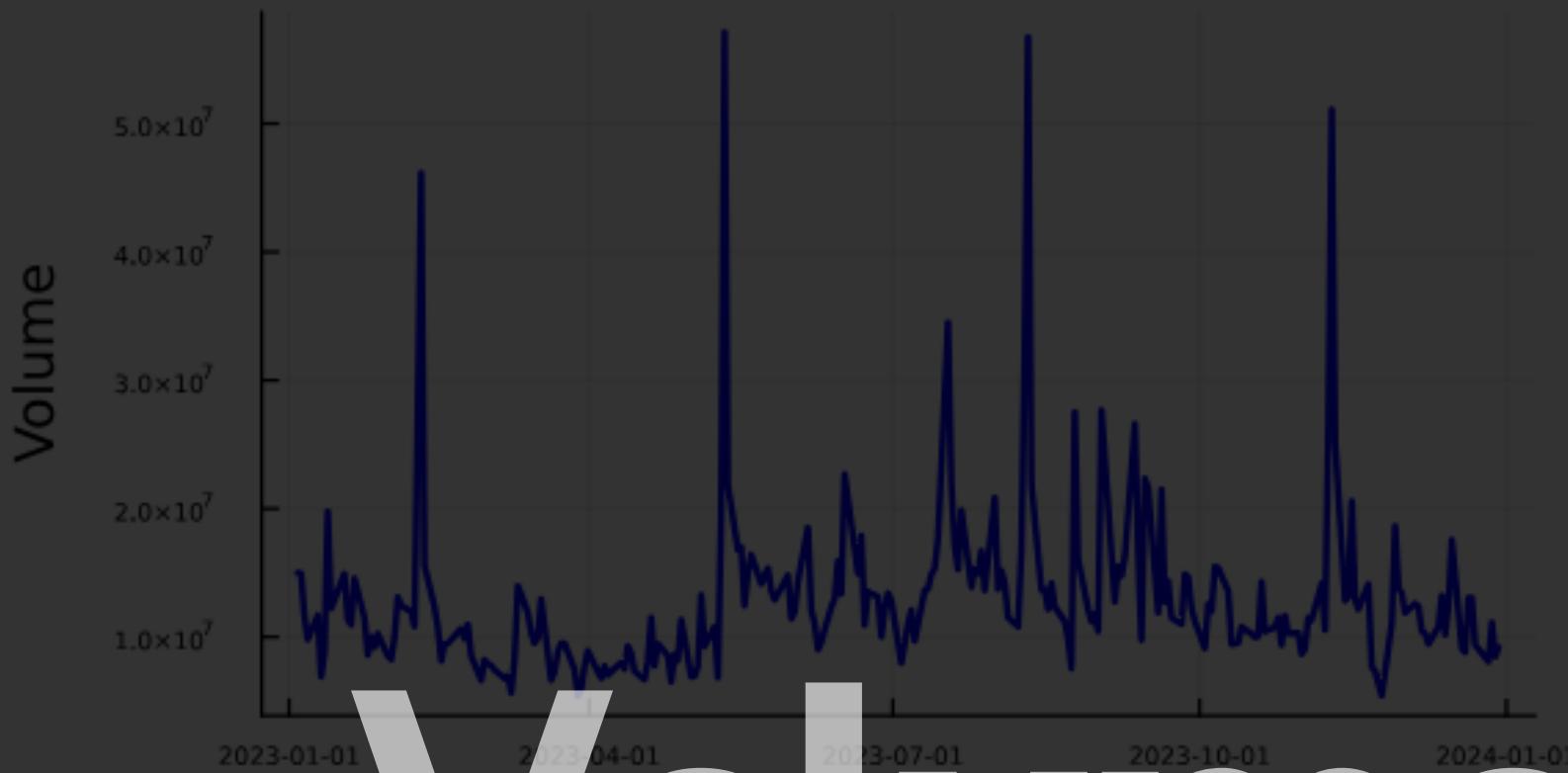
Closing Price of Comcast Corporation



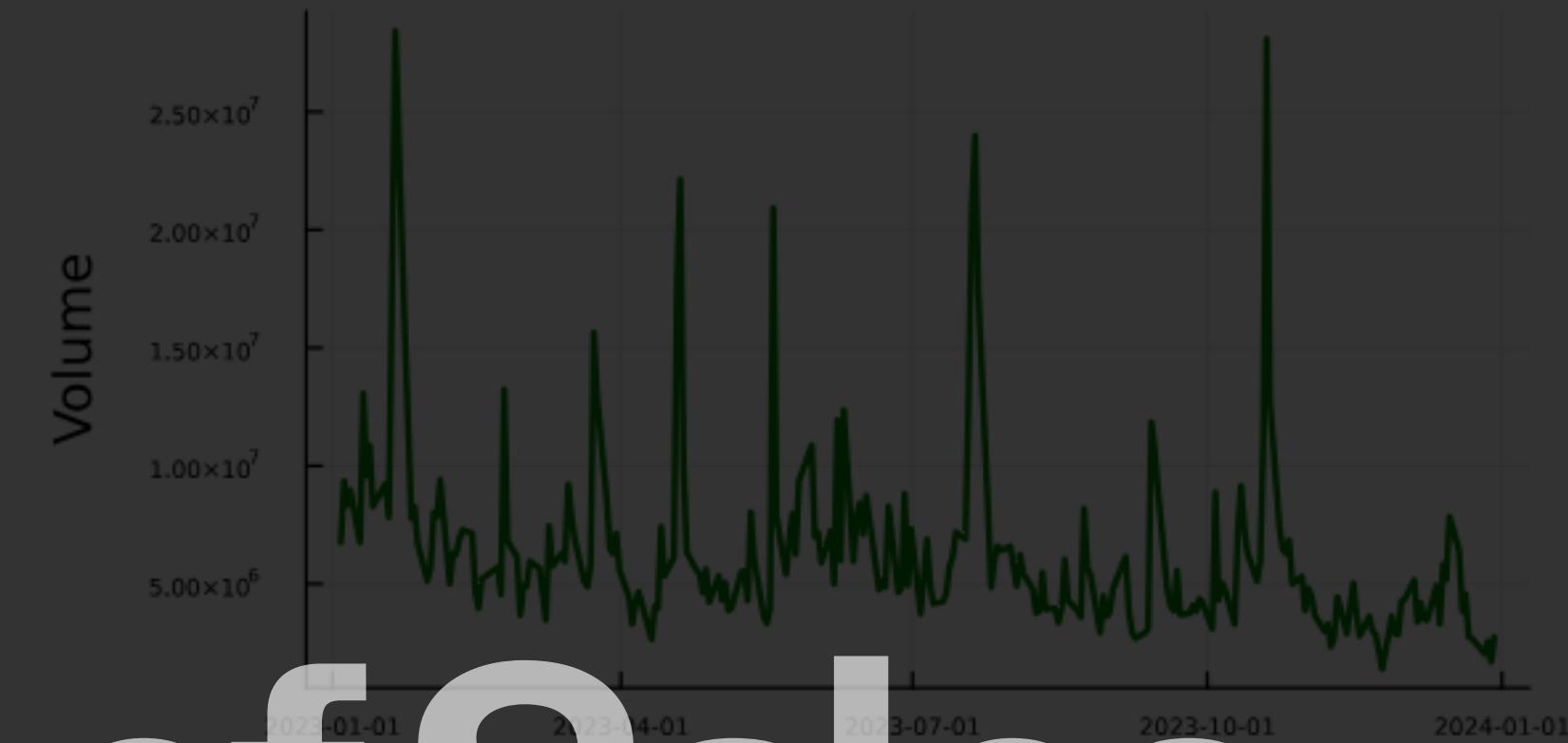
Closing Price of Paramount Global



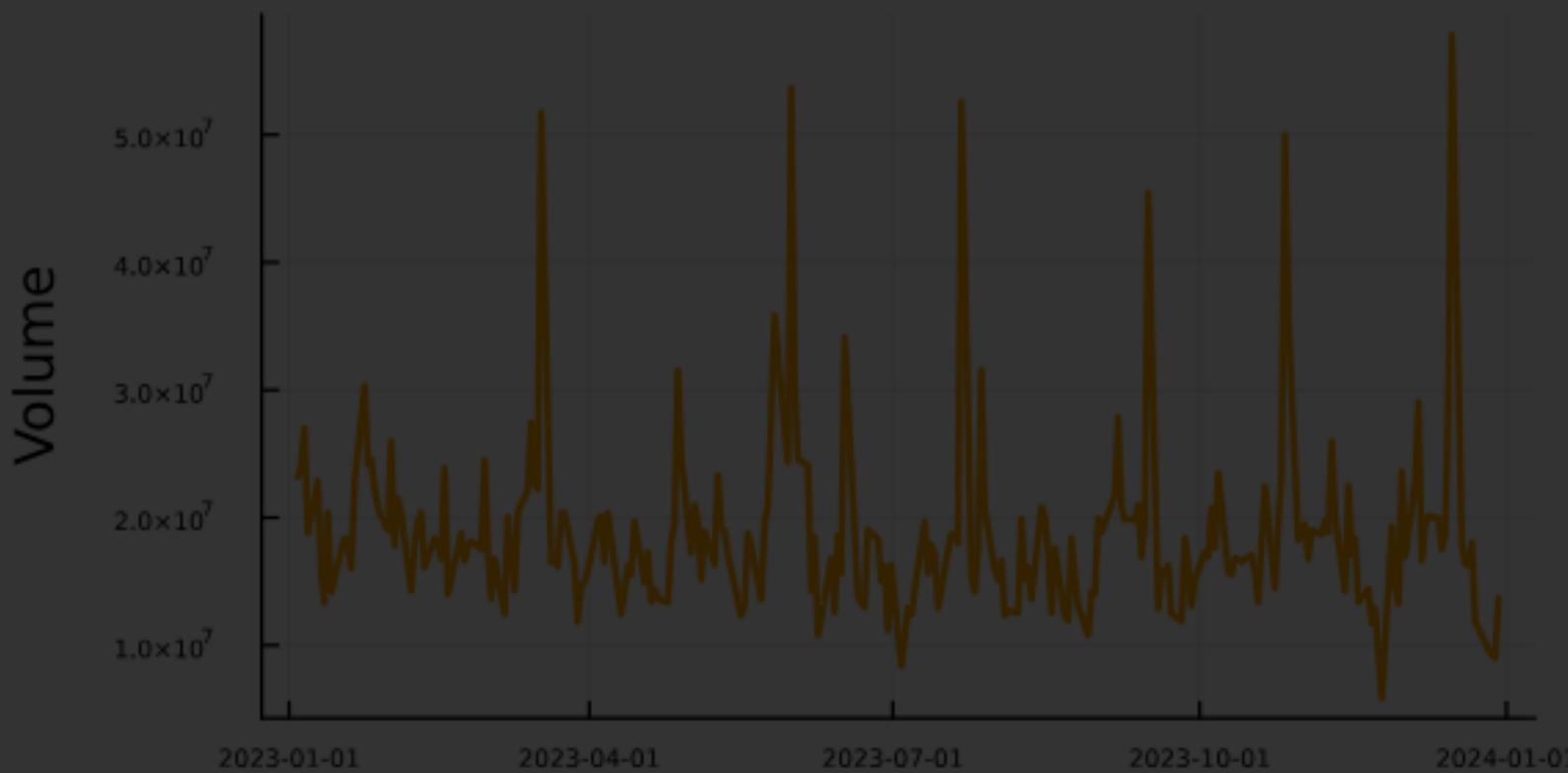
Sales Volume for The Walt Disney Company



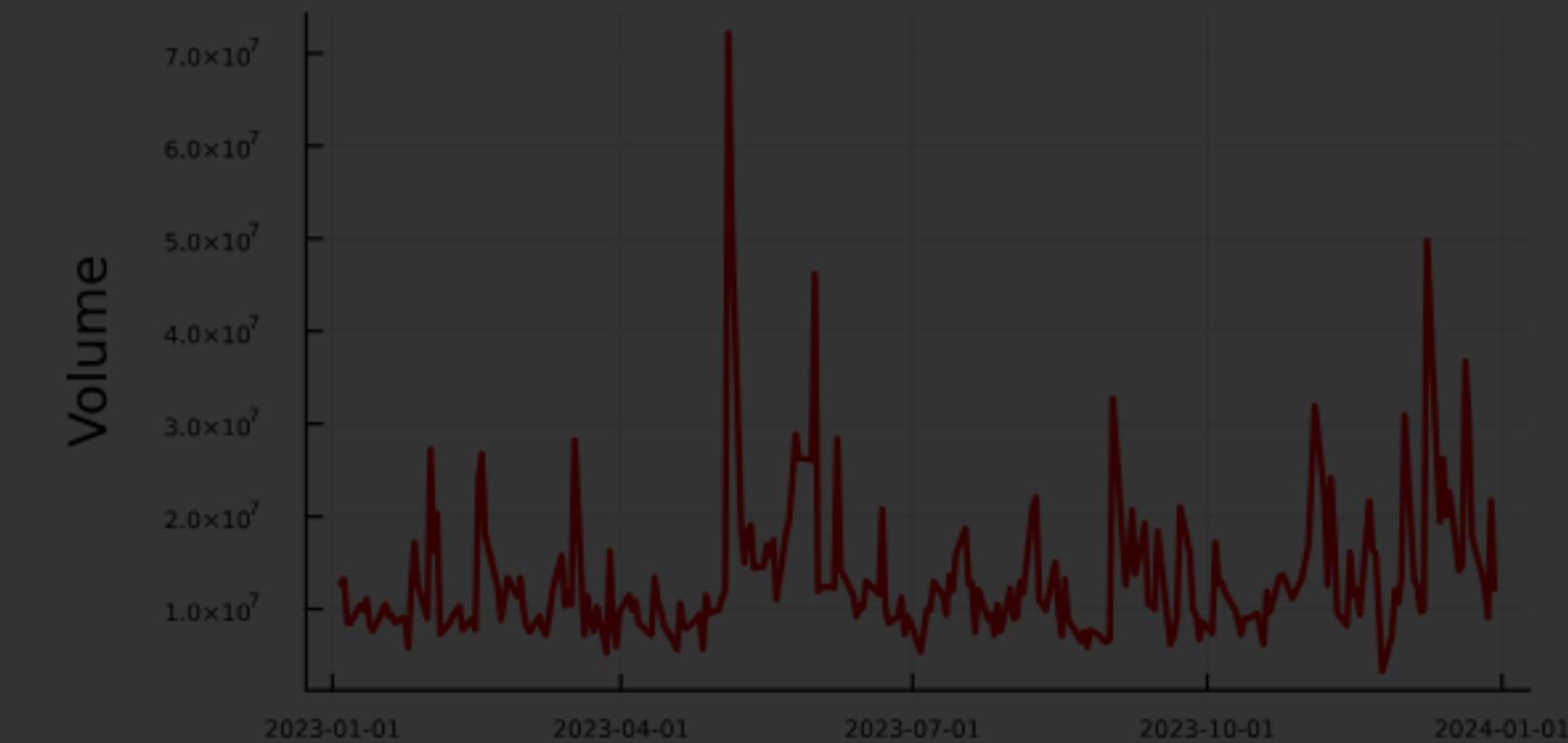
Sales Volume for Netflix, Inc.



Sales Volume for Comcast Corporation

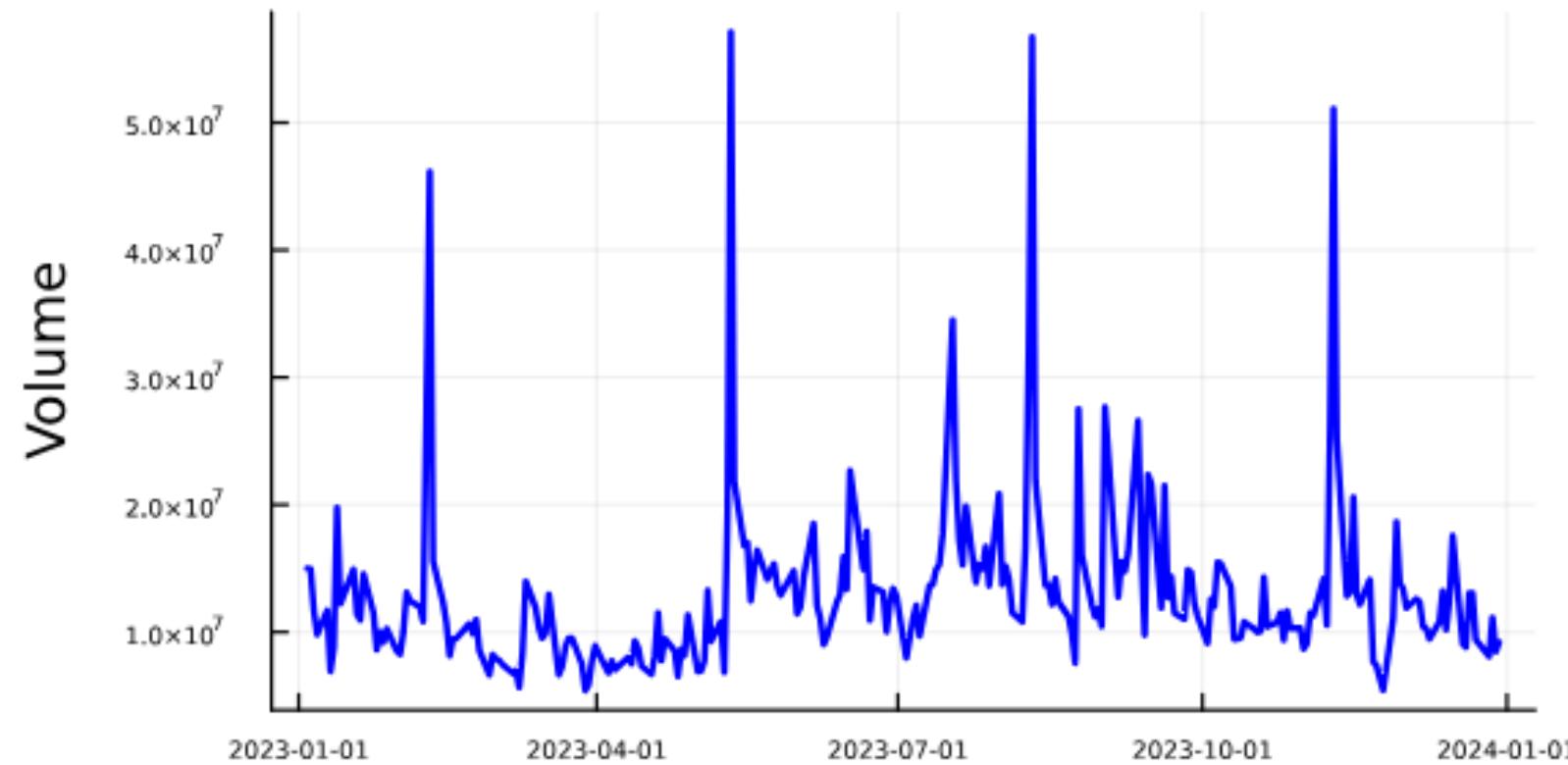


Sales Volume for Paramount Global

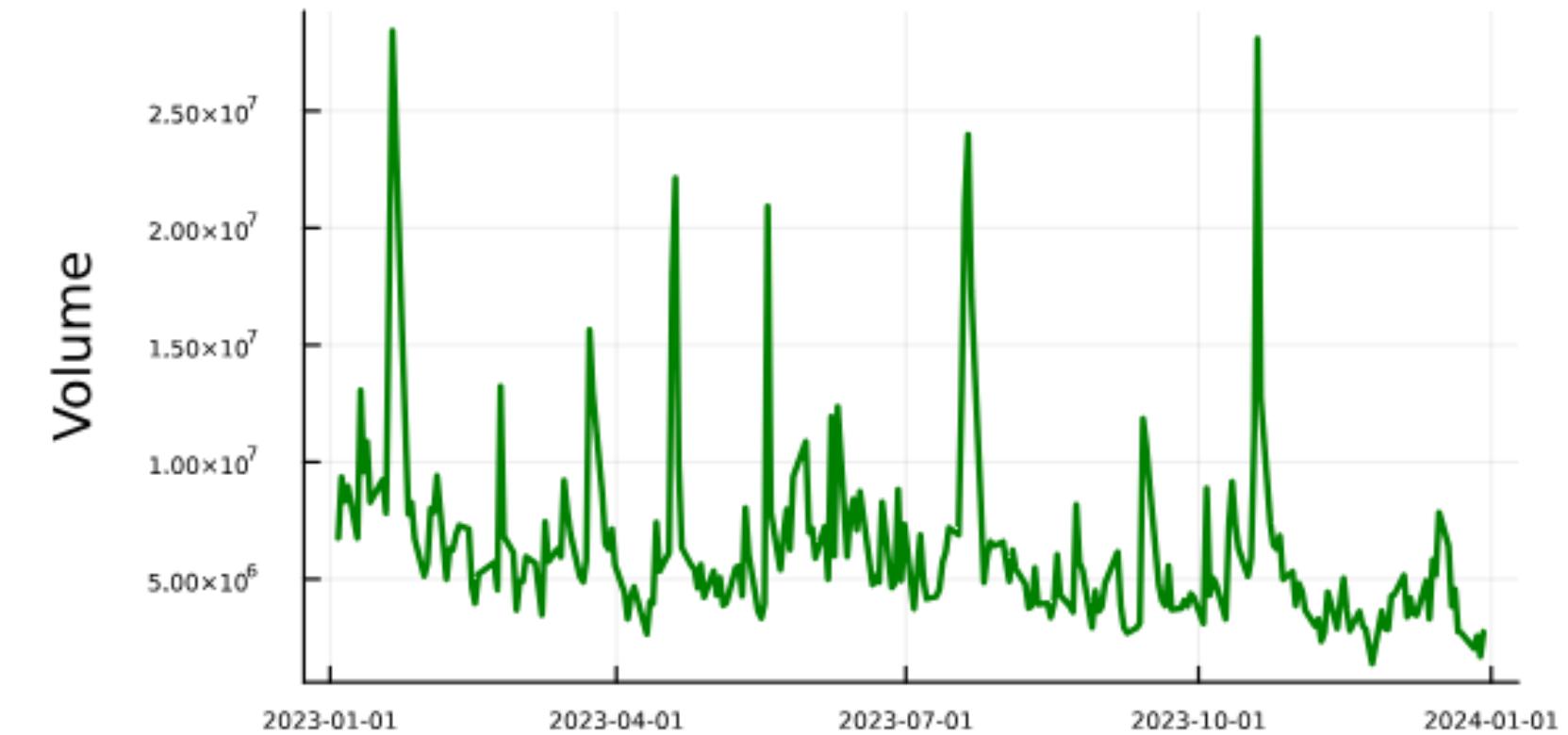


volume of Sales

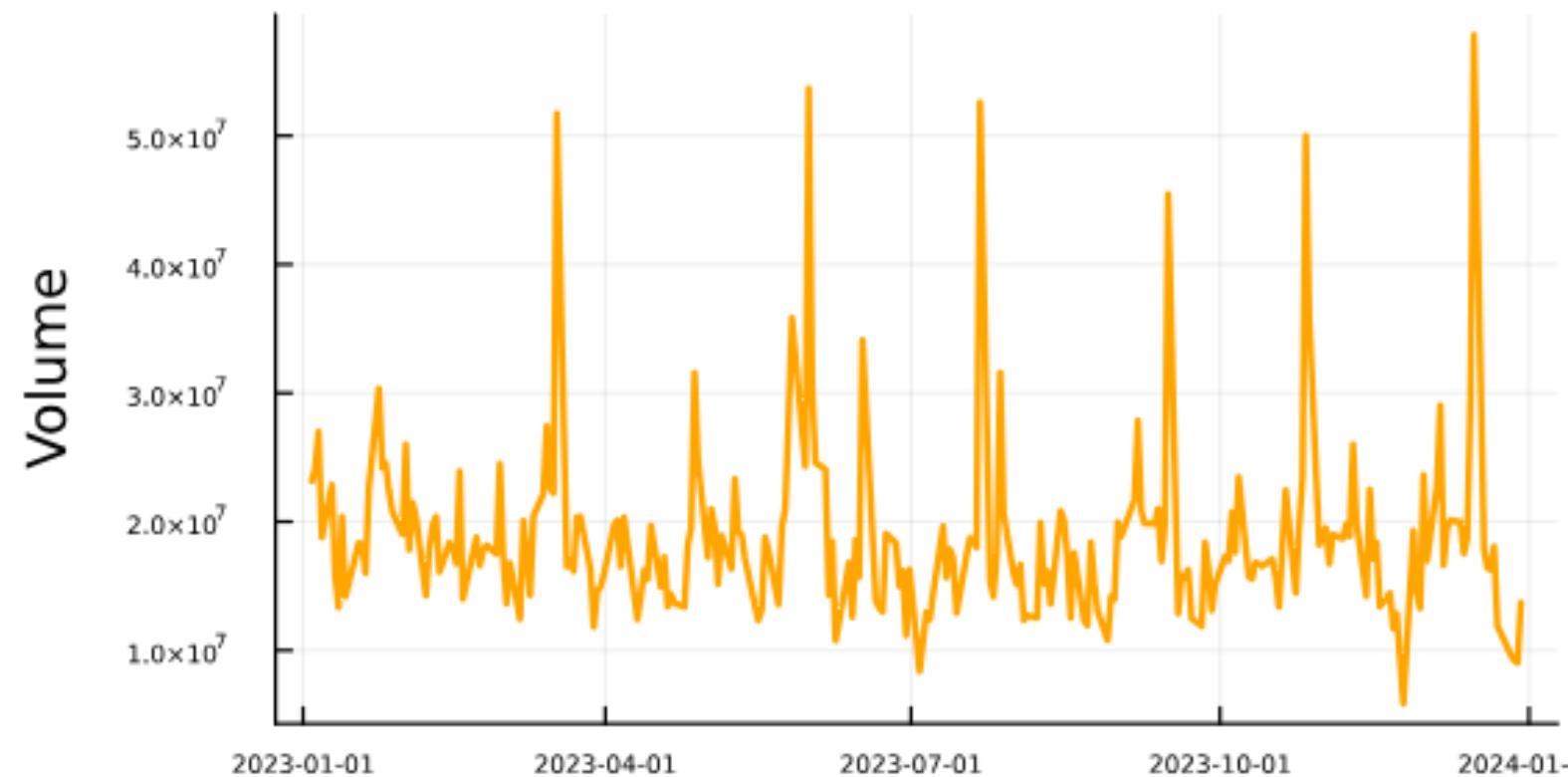
Sales Volume for The Walt Disney Company



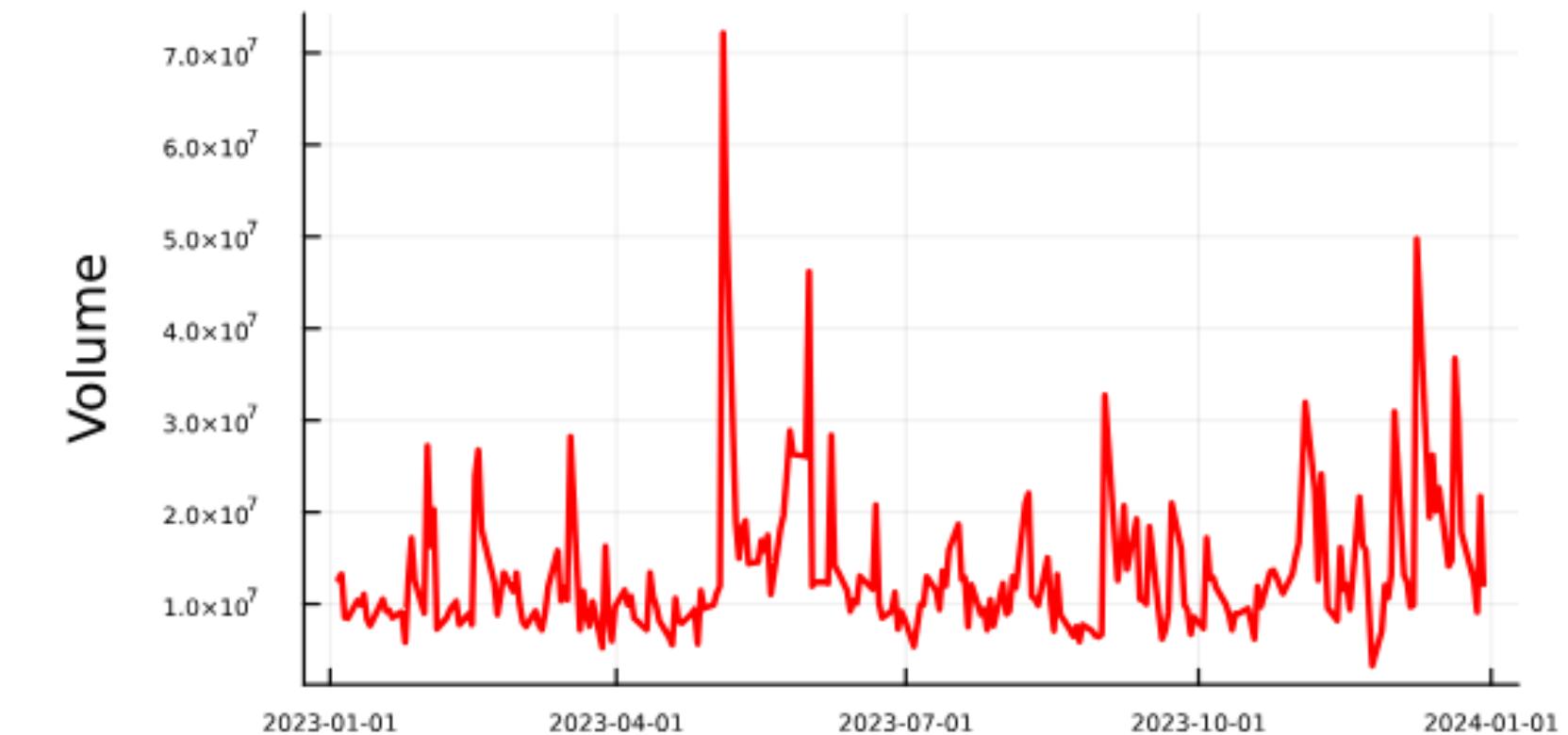
Sales Volume for Netflix, Inc.



Sales Volume for Comcast Corporation



Sales Volume for Paramount Global

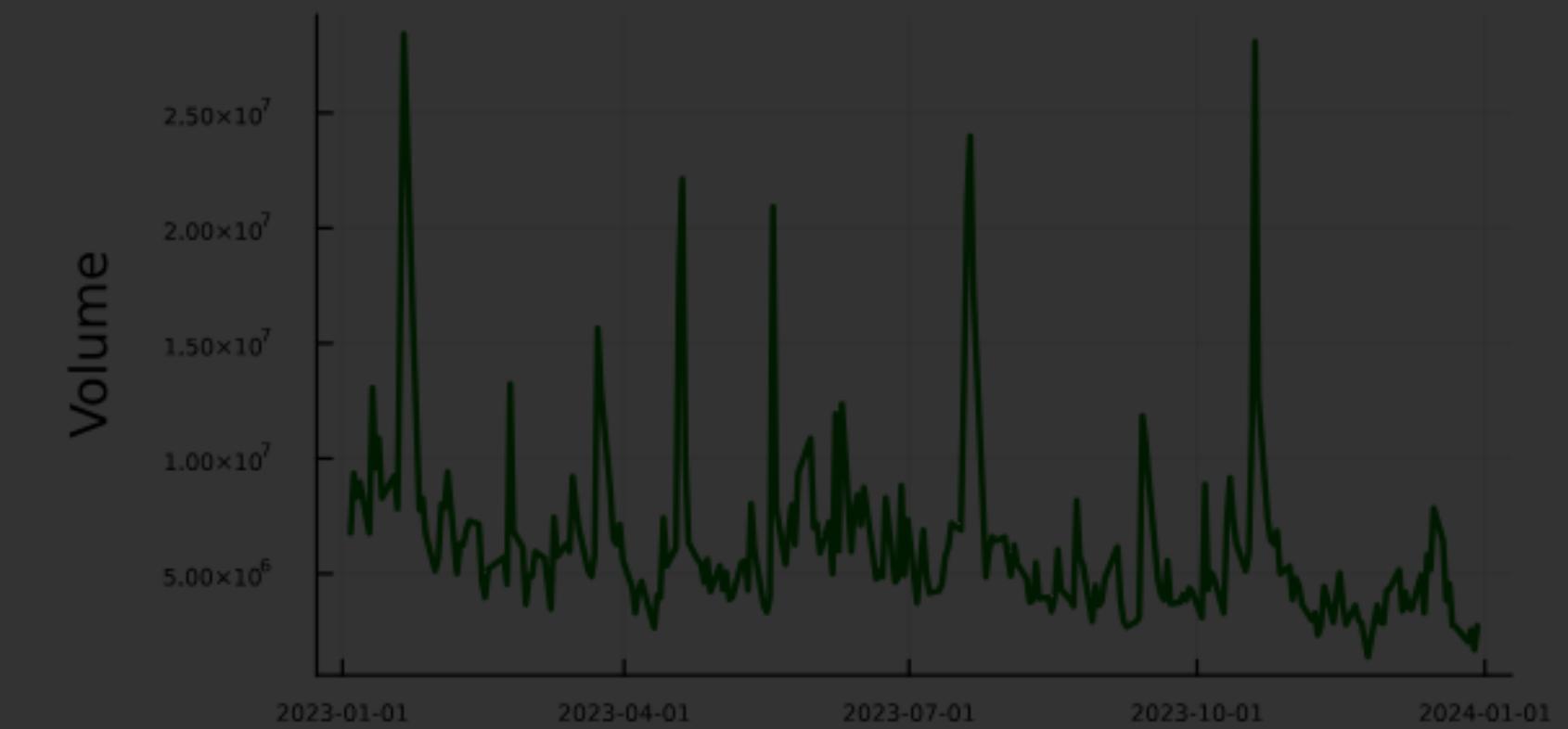


Sales Volume for The Walt Disney Company

Analysis

- Market Trends
- Industry Events

Sales Volume for Netflix, Inc.



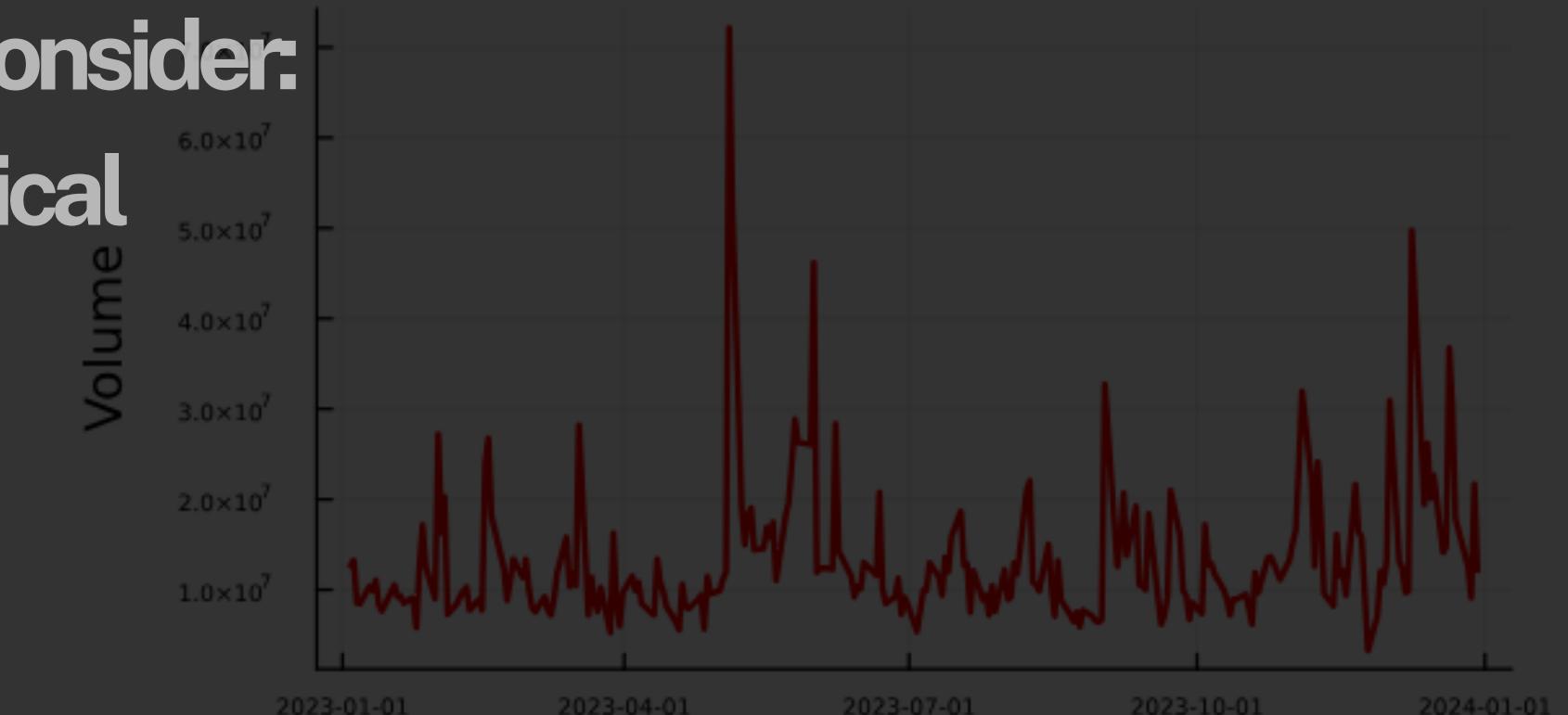
Sales Volume for Comcast Corporation

Here are some additional things to consider:

- Not all movements will be identical
- Federal Reserve Events
- Earnings Reports



Sales Volume for Paramount Global



The Walt Disney Company

Comcast Corporation

Moving Averages:

A moving average (MA) is a technical analysis tool used to smooth out price fluctuations and identify trends in a stock's price. It essentially calculates the average closing price of a stock over a chosen period of time.

Short-term (10-day and 20-day)

Mid-term (50-day)

Long-term (100-day and 200-day)

Price



Adj Close

MA for 10 days

MA for 20 days

MA for 50 days

MA for 100 days

MA for 200 days

2023-01
2023-03
2023-05
2023-07
2023-09
2023-11
2024-01

Adj Close

MA for 10 days

MA for 20 days

MA for 50 days

MA for 100 days

MA for 200 days

Price

46

44

42

40

38

36

34

32

30

28

26

24

22

20

18

16

14

12

10

8

6

4

2

0

Price

25.0

22.5

20.0

17.5

15.0

12.5

10.0

7.5

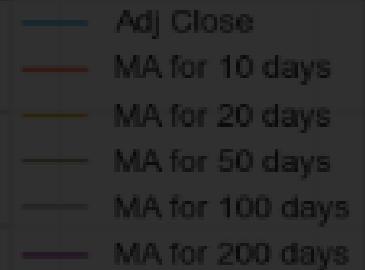
5.0

2.5

0.0

Price

2023-01
2023-03
2023-05
2023-07
2023-09
2023-11
2024-01



Adj Close
MA for 10 days
MA for 20 days
MA for 50 days
MA for 100 days
MA for 200 days

Price

2023-01
2023-03
2023-05
2023-07
2023-09
2023-11
2024-01

The Walt Disney Company



Comcast Corporation



Netflix, Inc.



Paramount Global



The Walt Disney Company

Comcast Corporation

Moving Averages:

Important things to remember about moving averages:

- Moving averages are lagging indicators.

- Crossovers

- Not a guarantee

Price



Netflix, Inc.

Netflix, Inc.

Price



Paramount Global



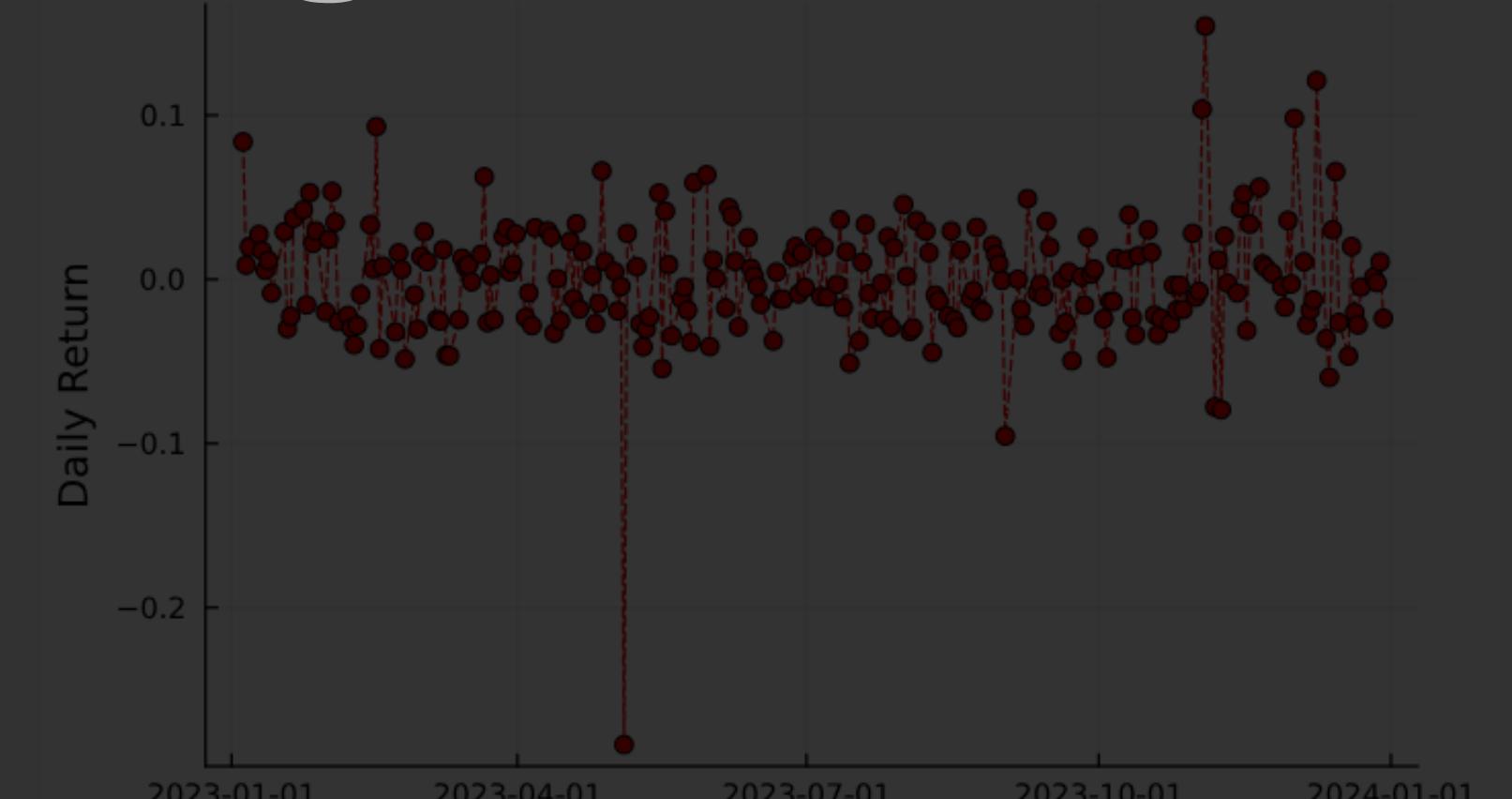
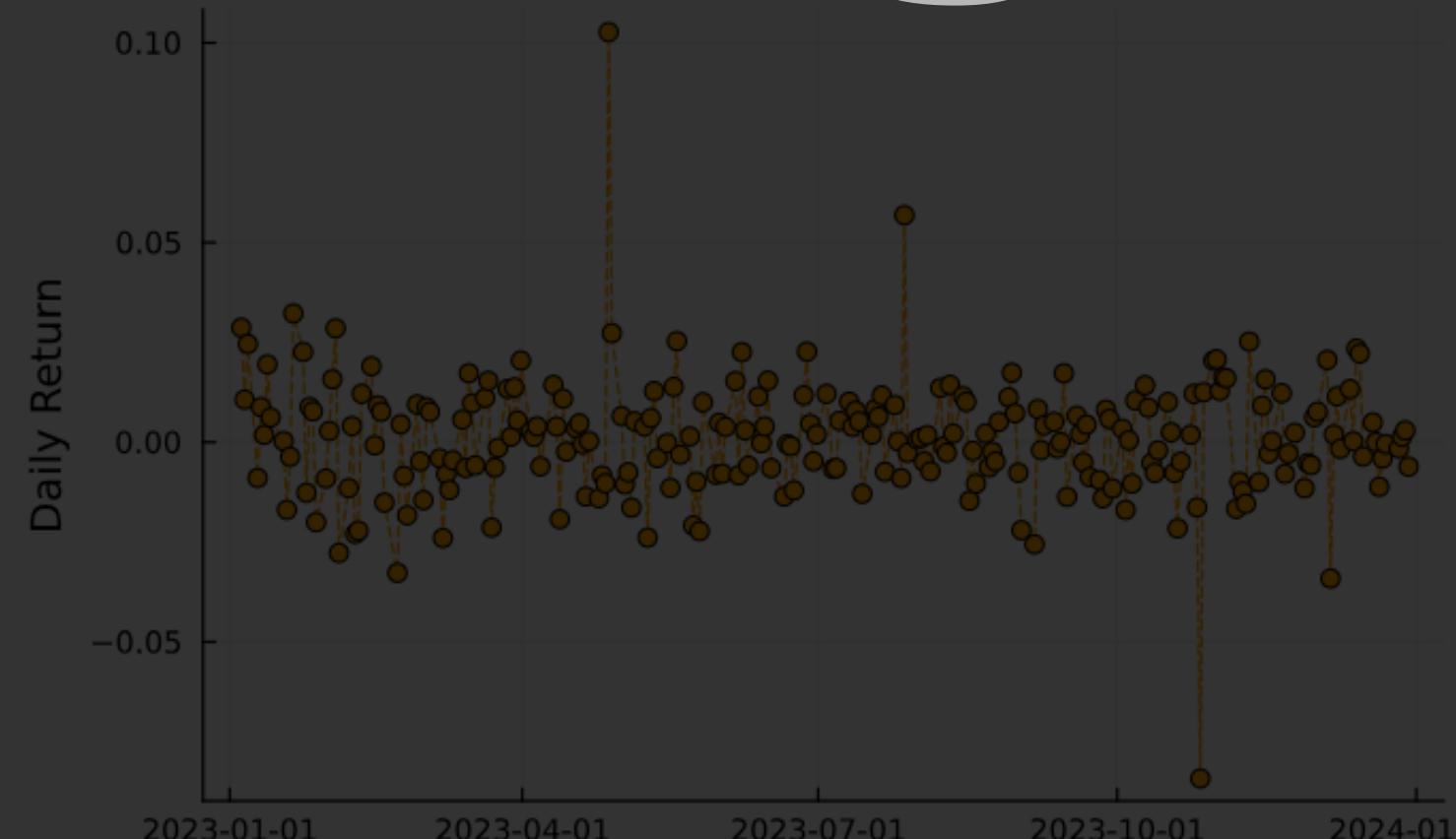
Daily Returns of The Walt Disney Company



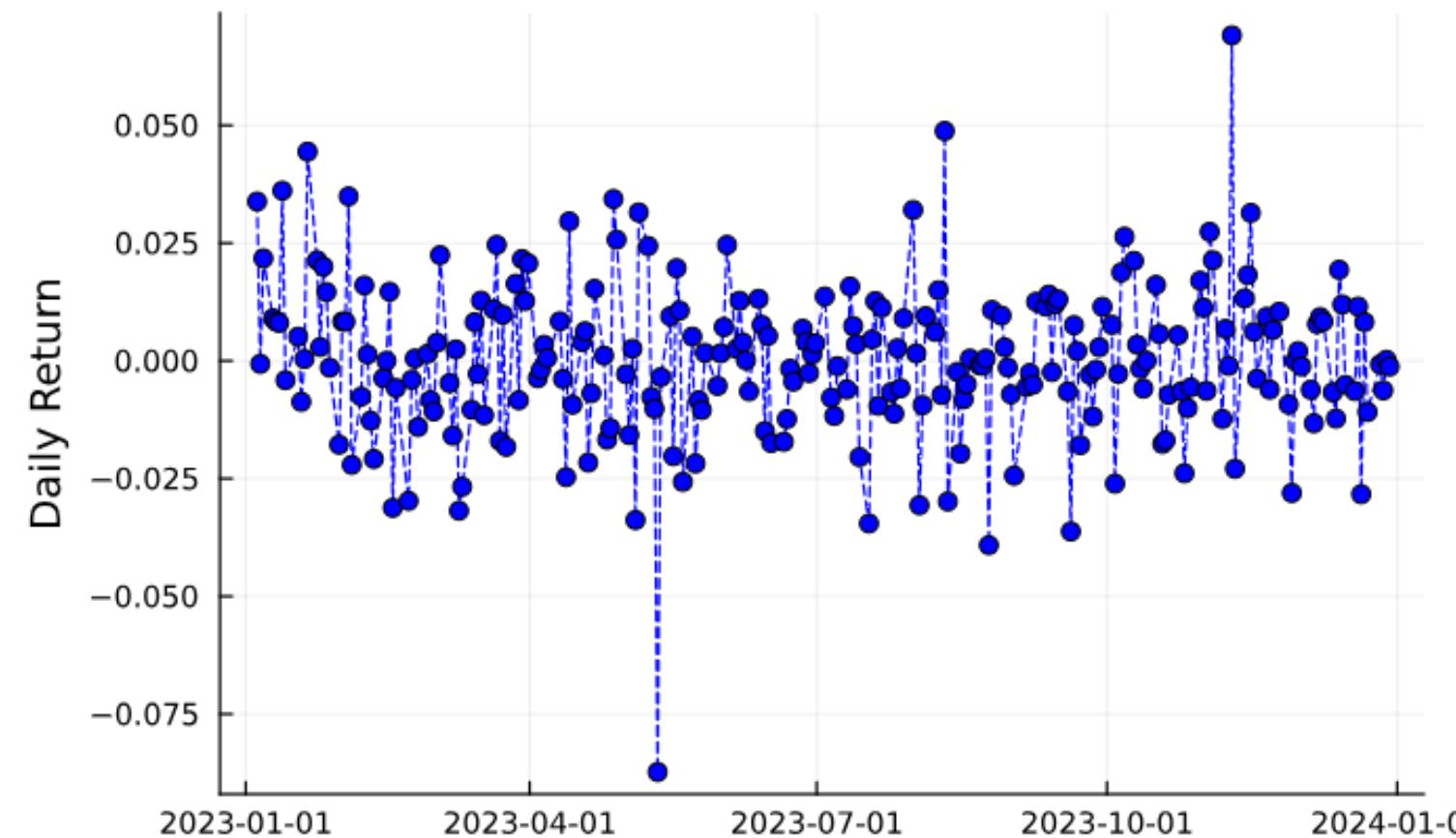
Daily Returns of Netflix, Inc.



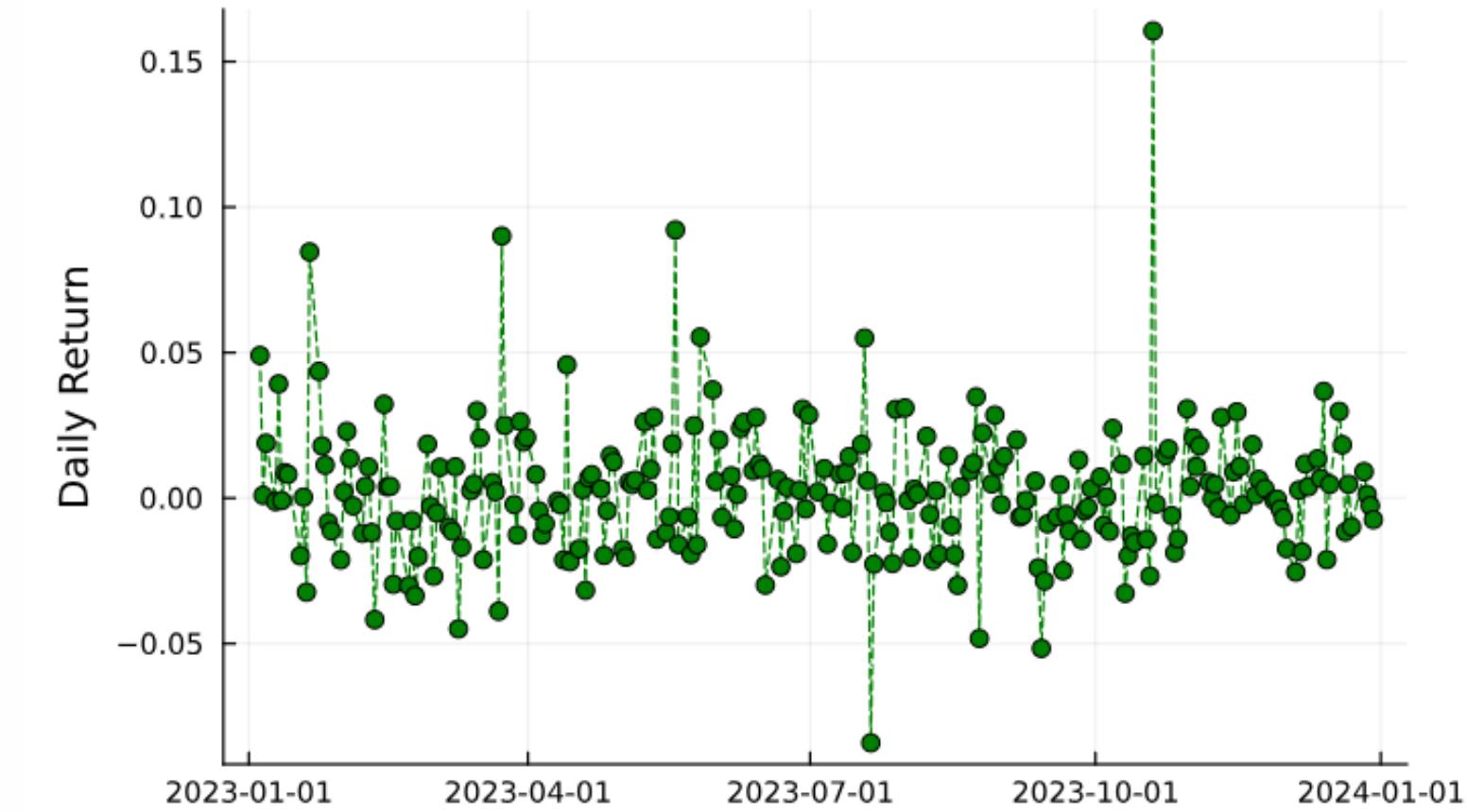
Average Daily Return



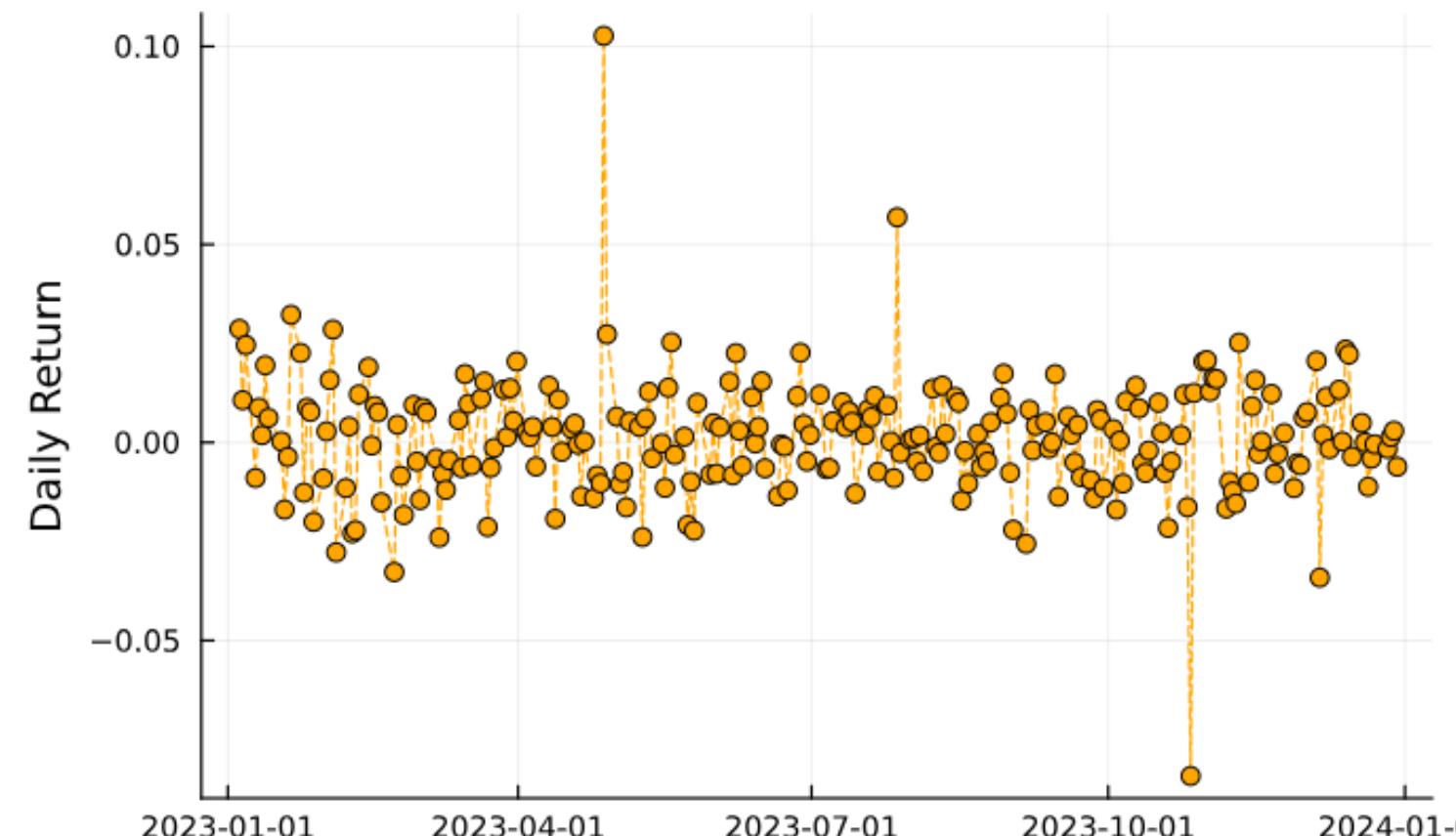
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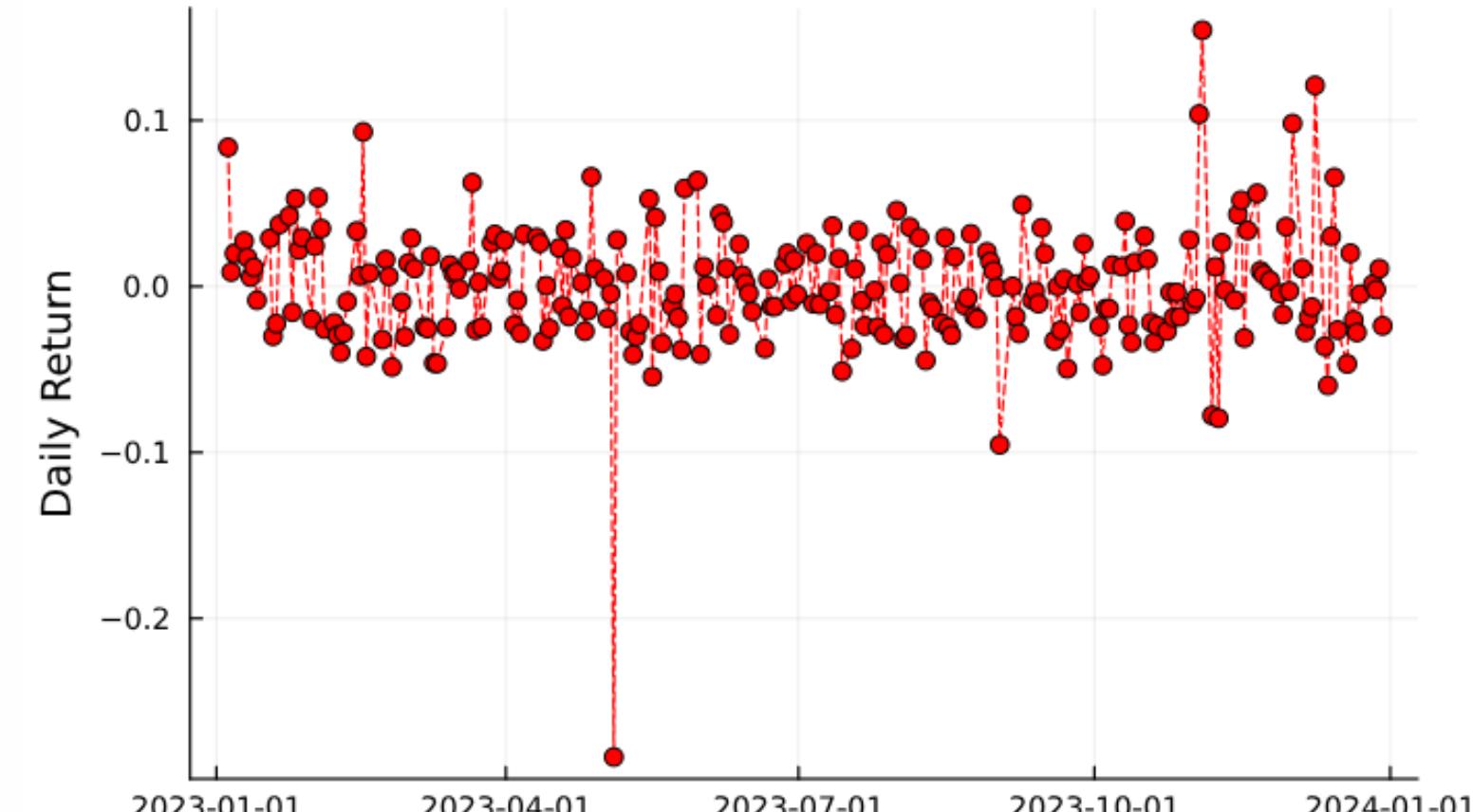
Daily Returns of Netflix, Inc.



Daily Returns of Comcast Corporation



Daily Returns of Paramount Global



Daily Returns of The Walt Disney Company

Average Daily Return

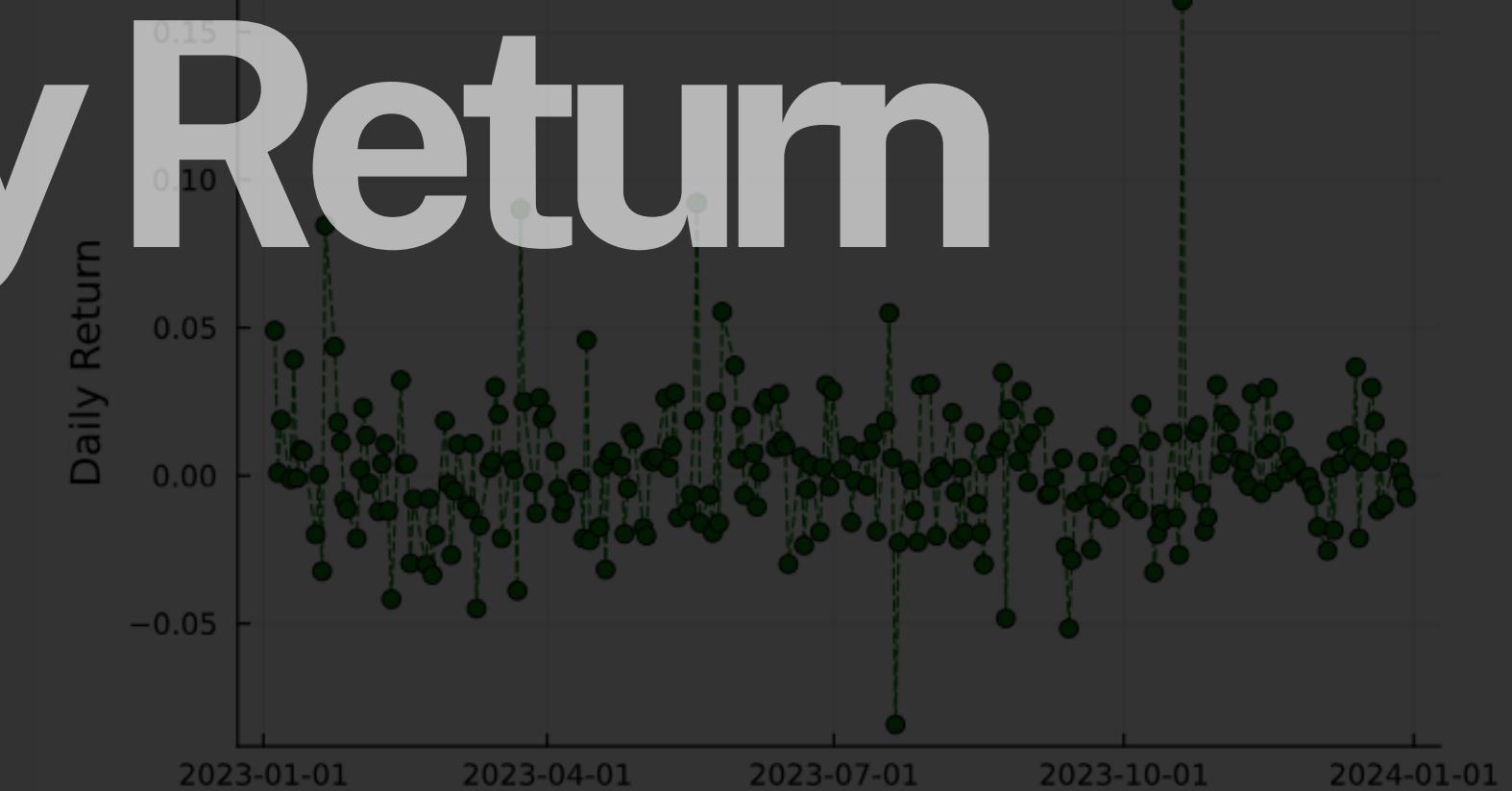
Company Specific Factors:

- Business Performance
- Exposure to Specific Events
- Recent Scandals

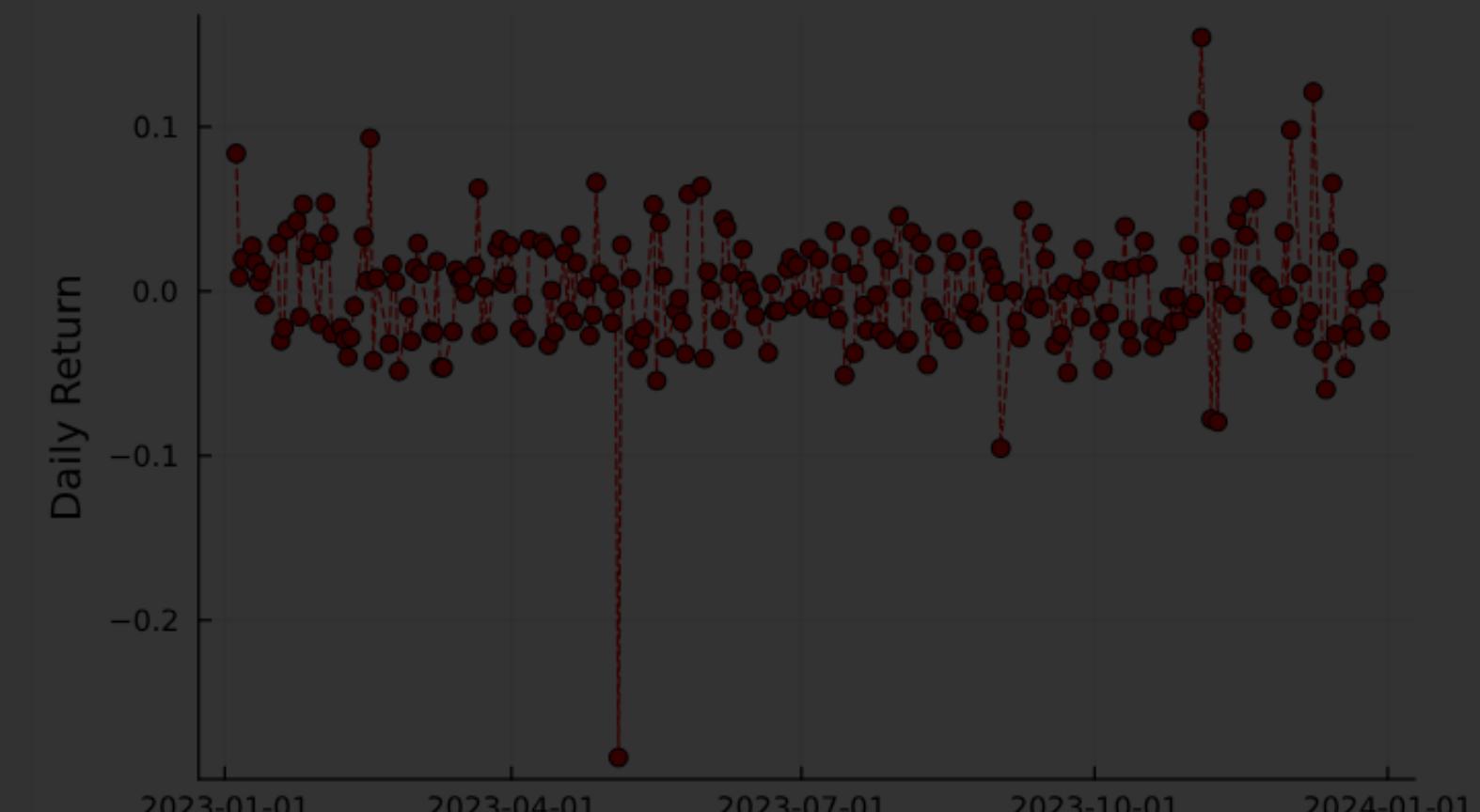
Market Sector Performance

- Differing Industry Performance

Daily Returns of Netflix, Inc.



Daily Returns of Paramount Global

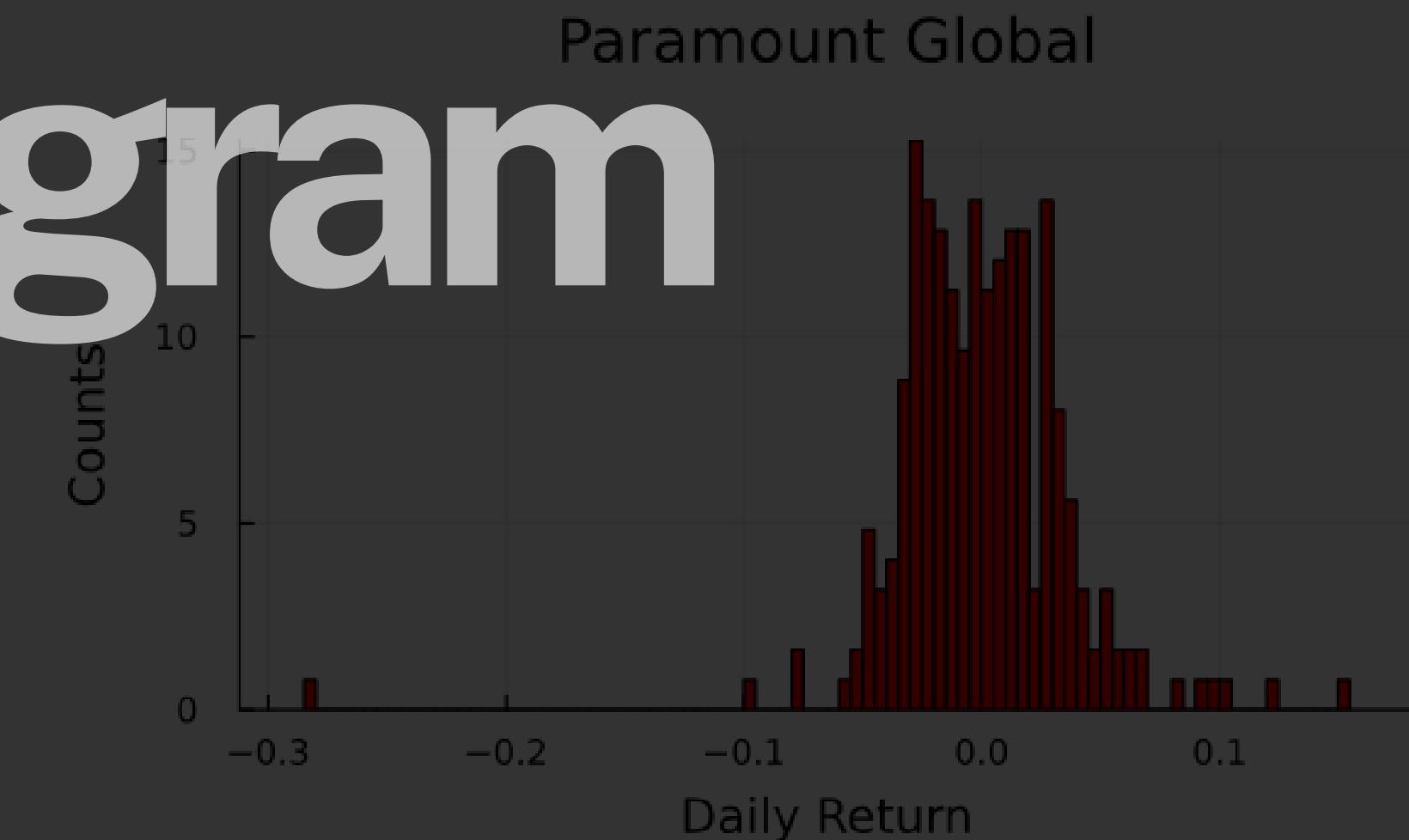
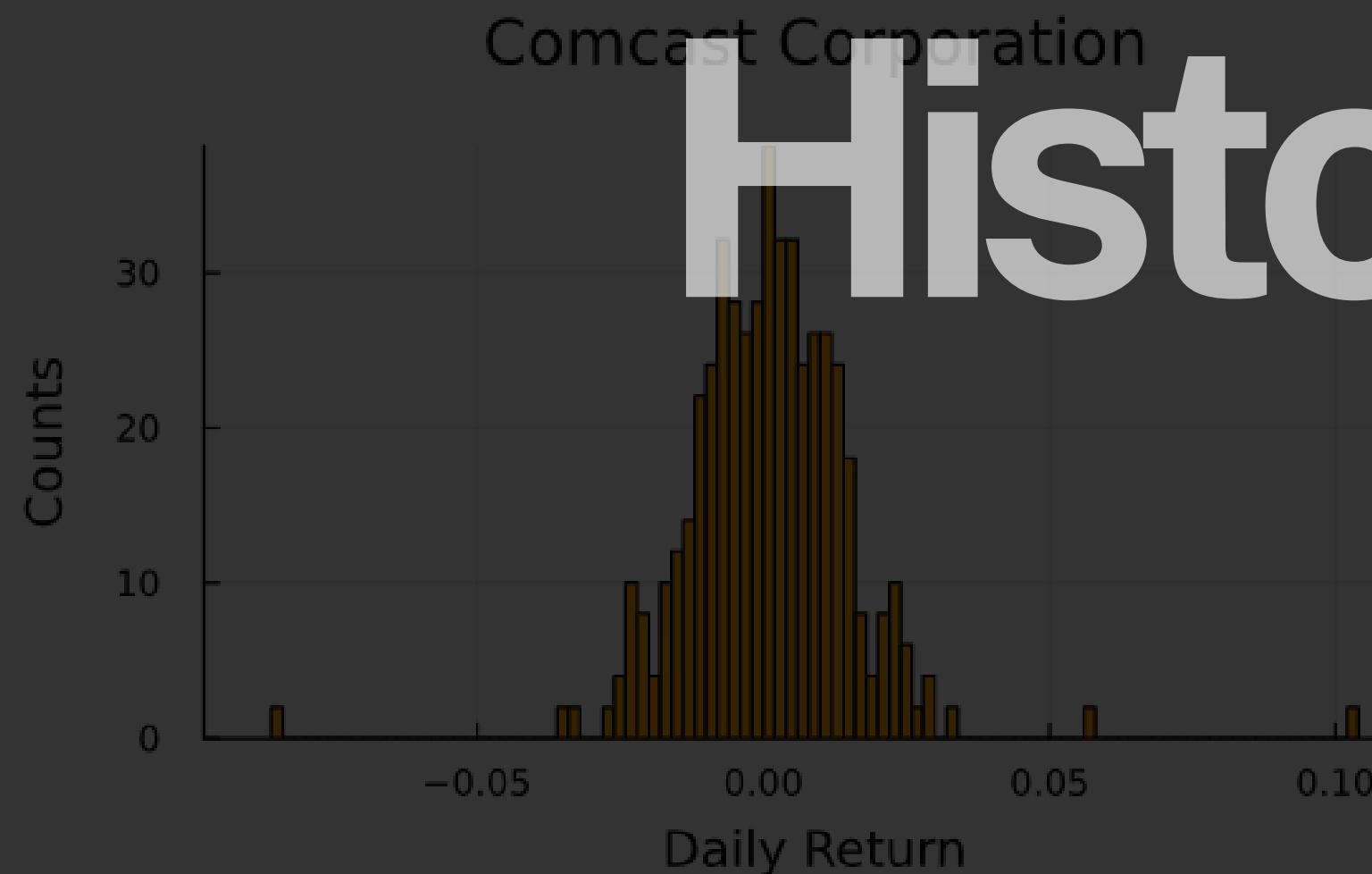
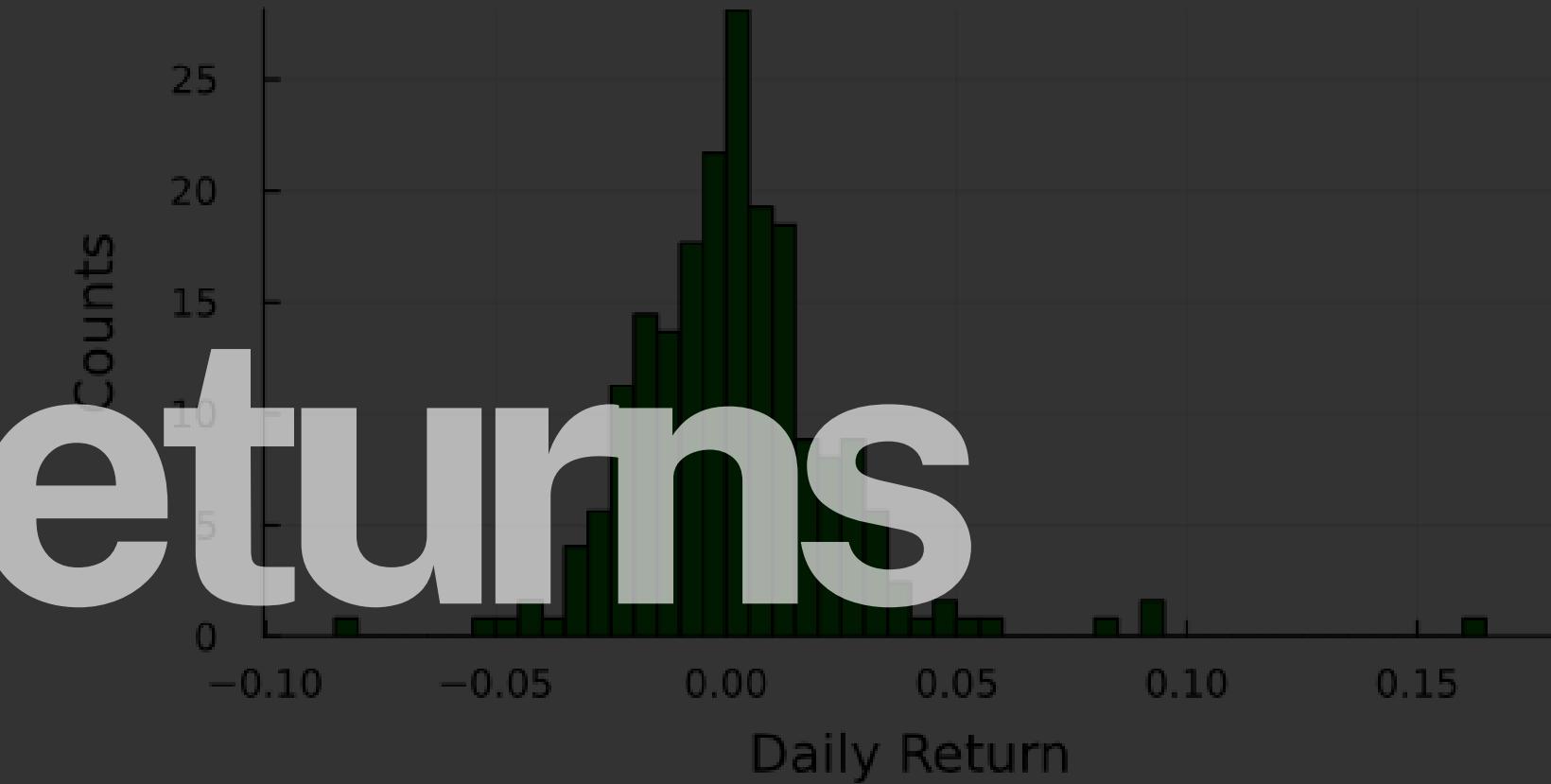
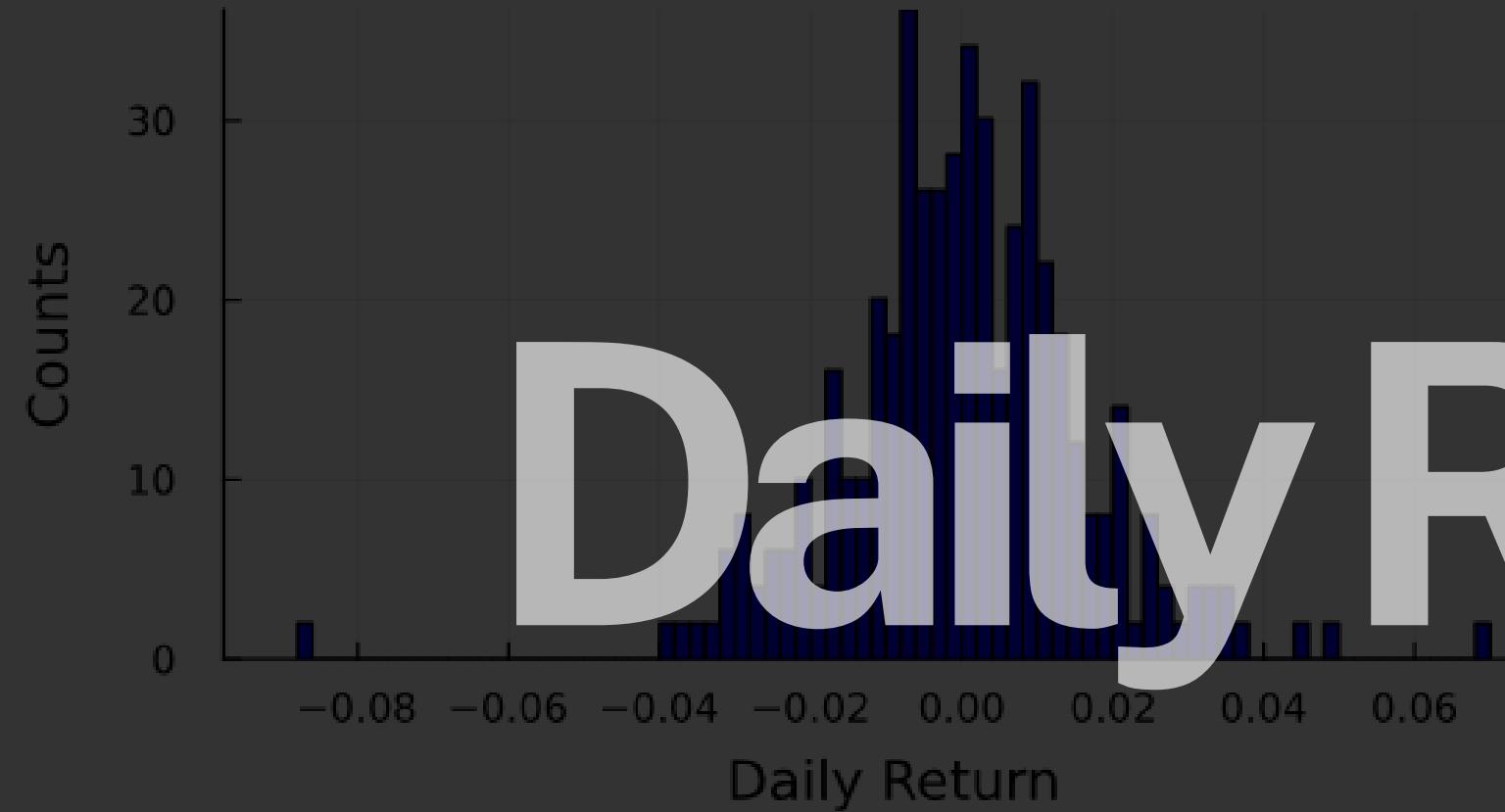


Daily Returns of Comcast Corporation



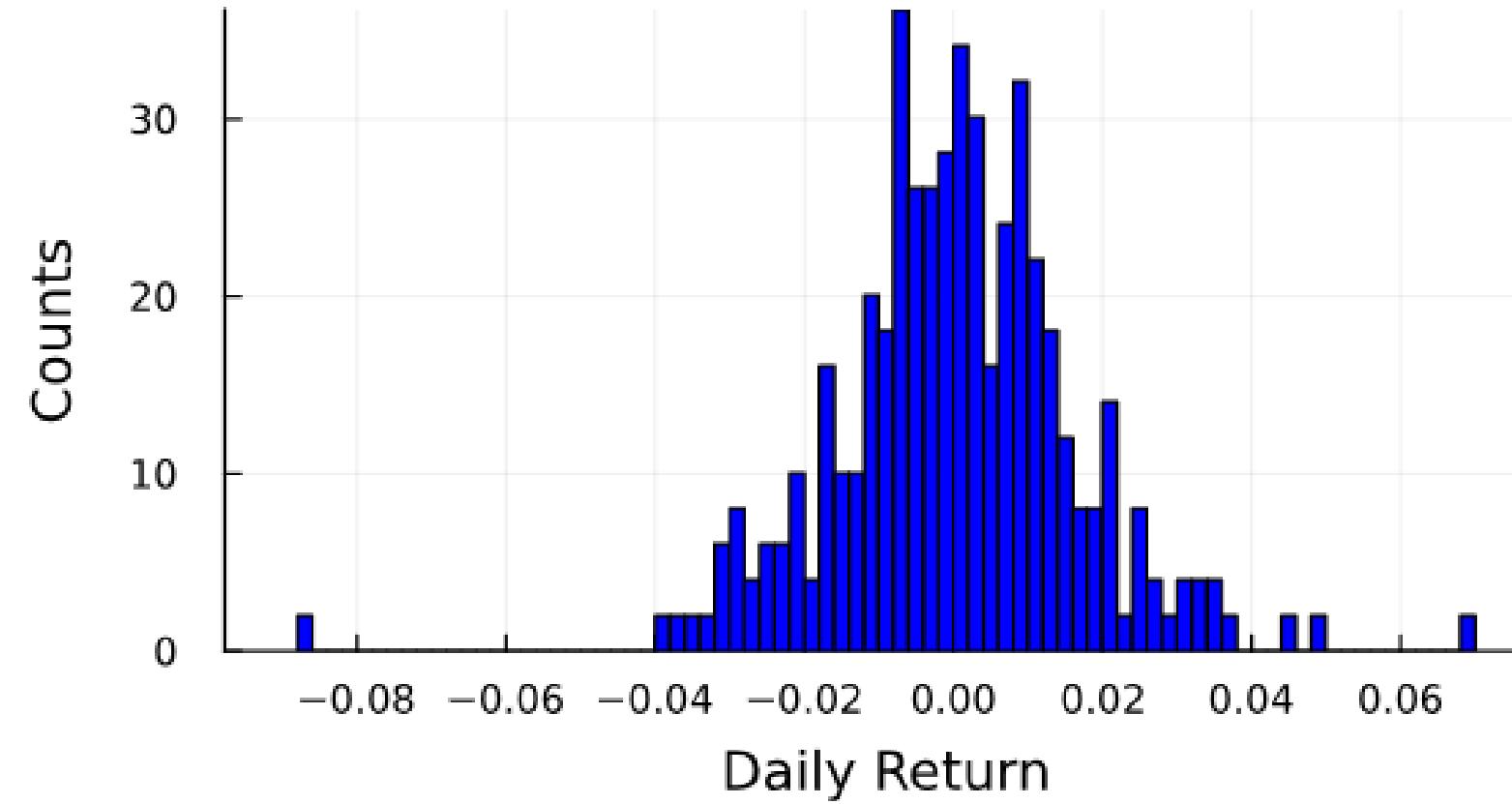
The Walt Disney Company

Netflix, Inc.

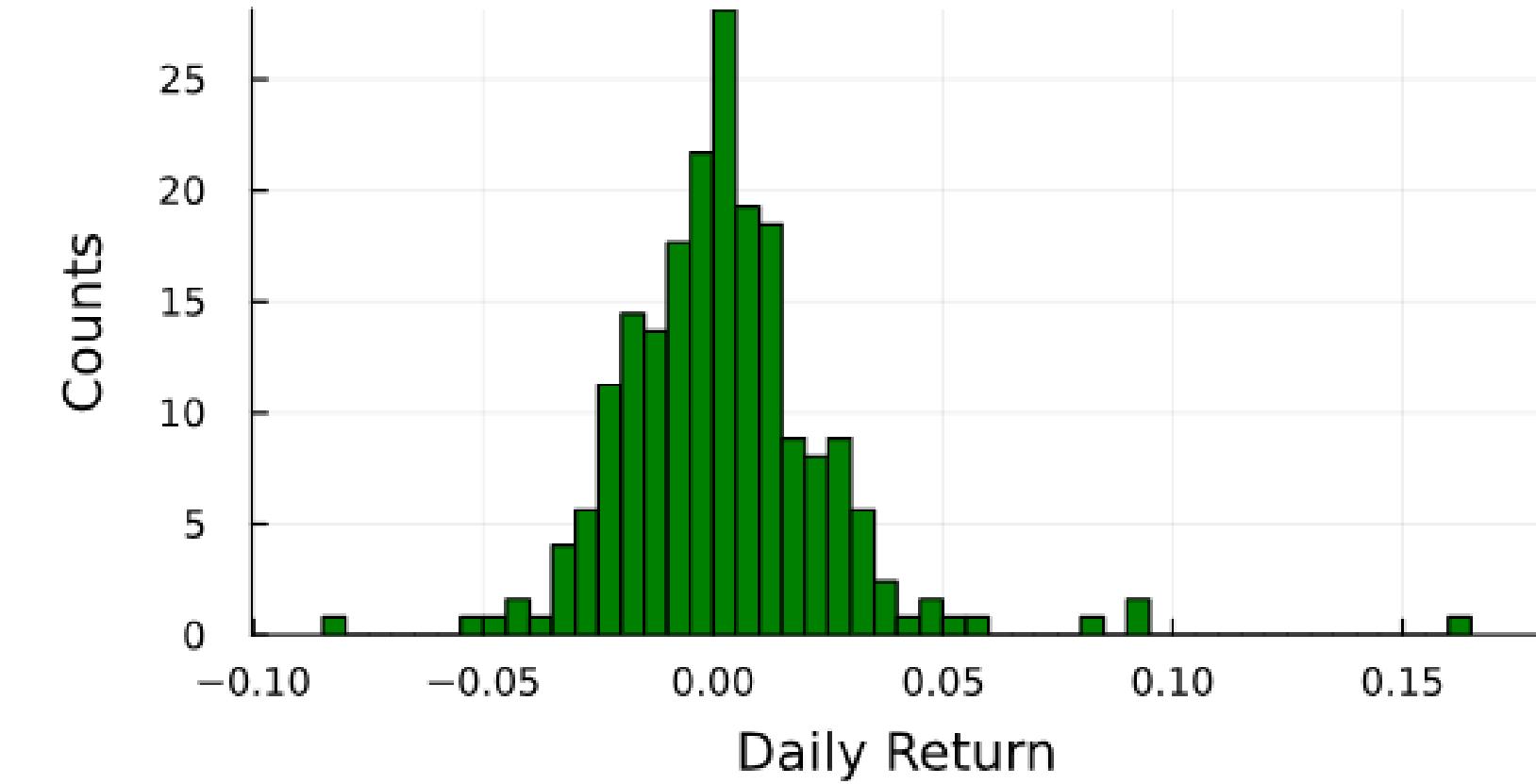


Histogram

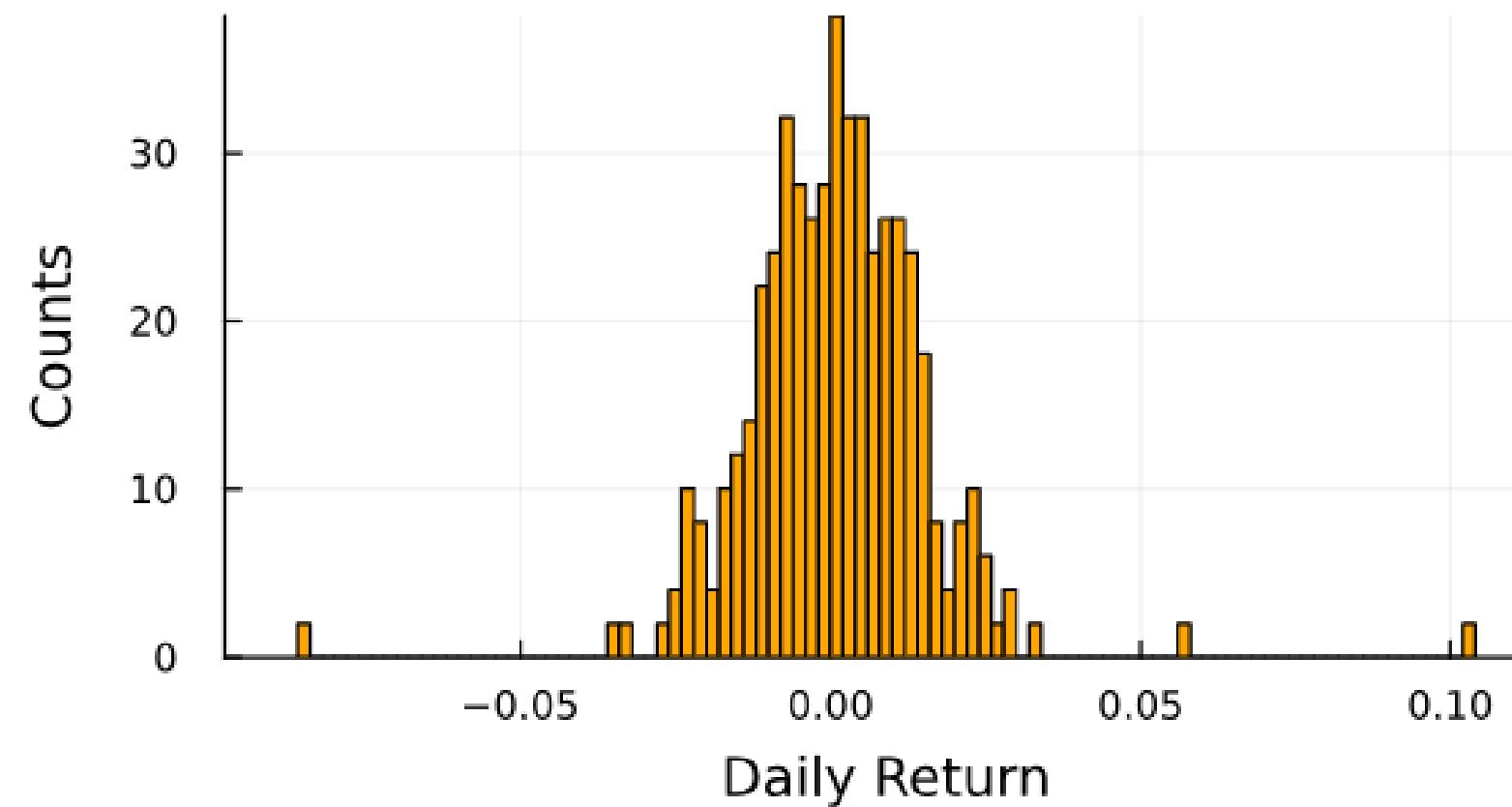
The Walt Disney Company



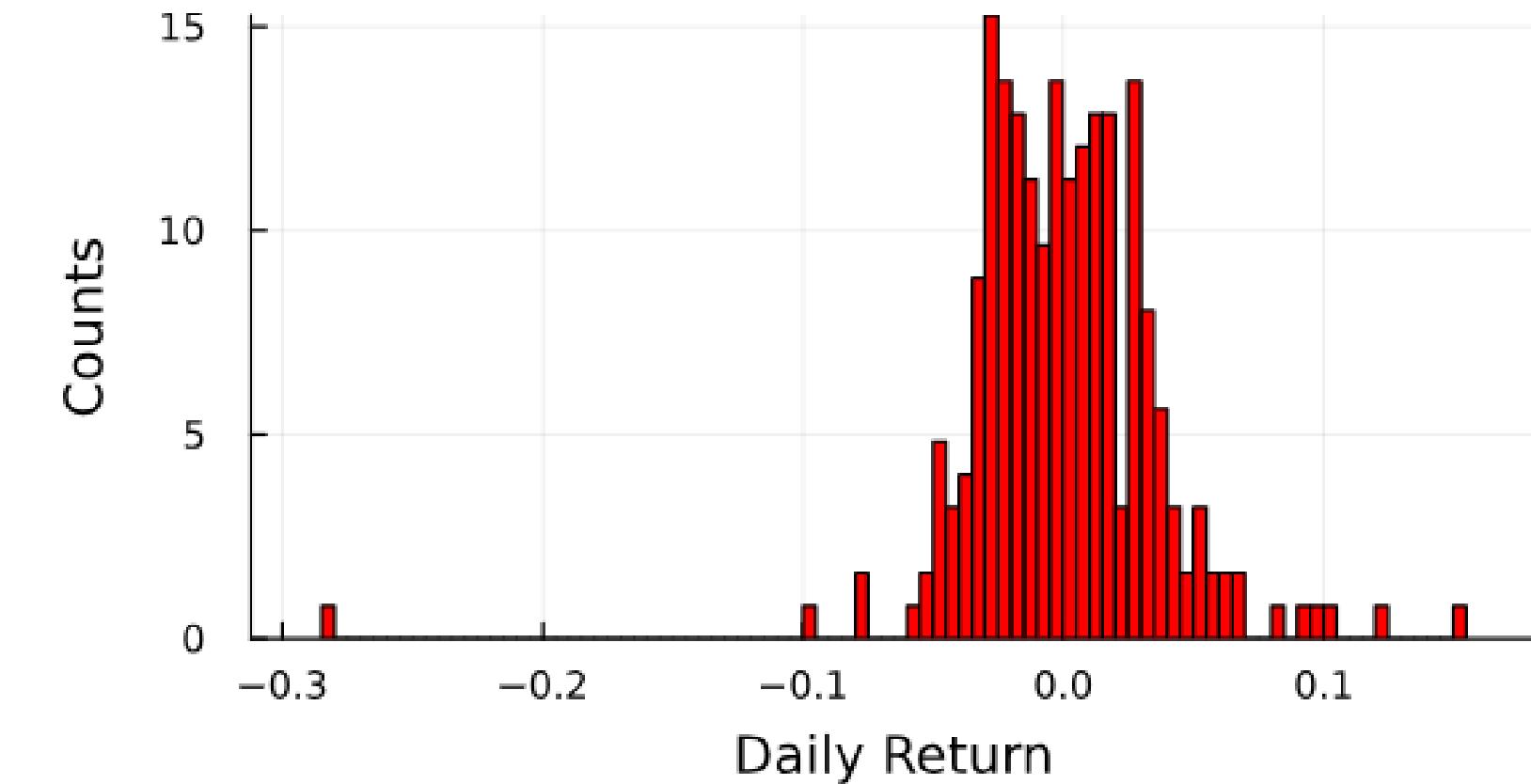
Netflix, Inc.



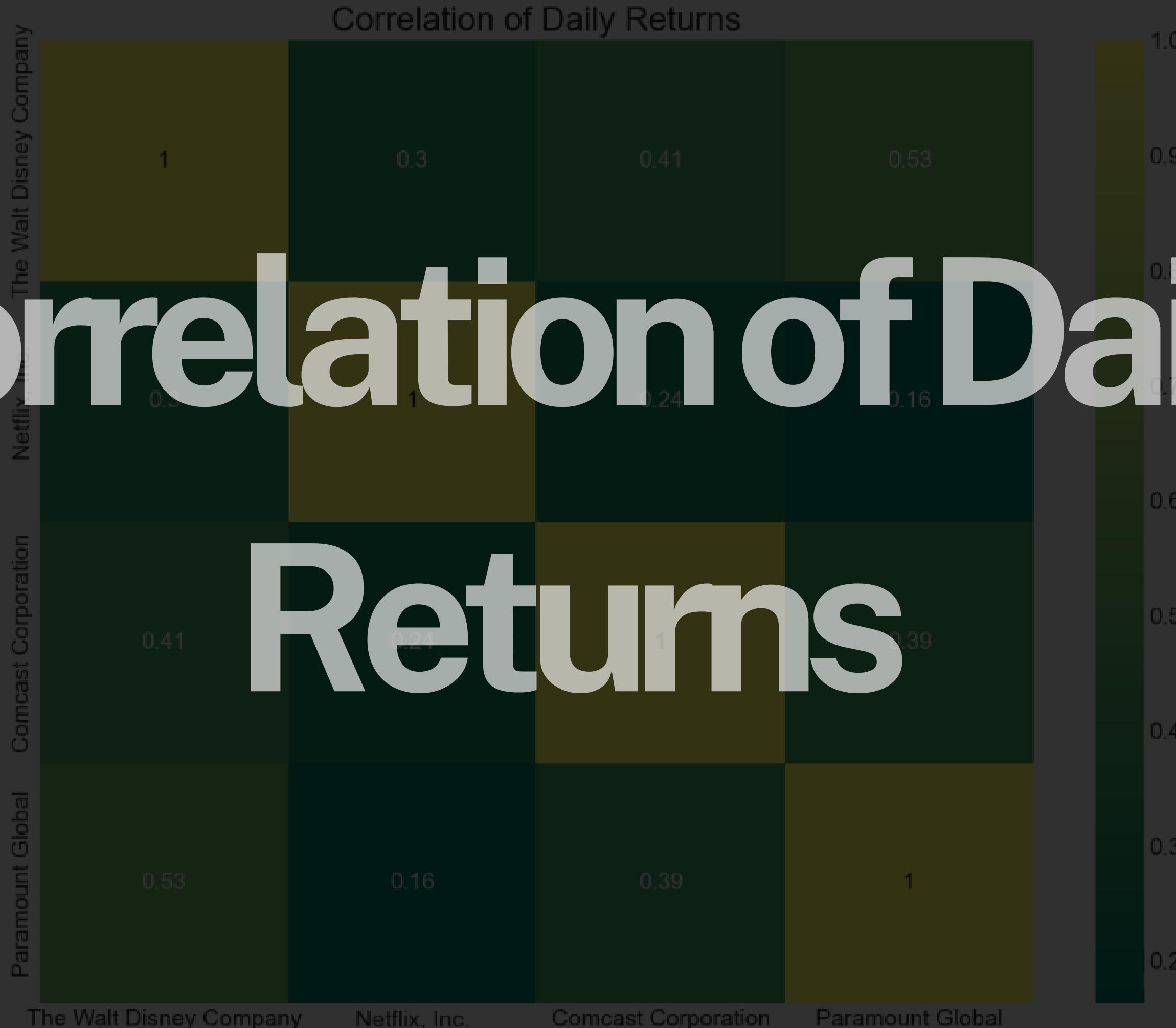
Comcast Corporation



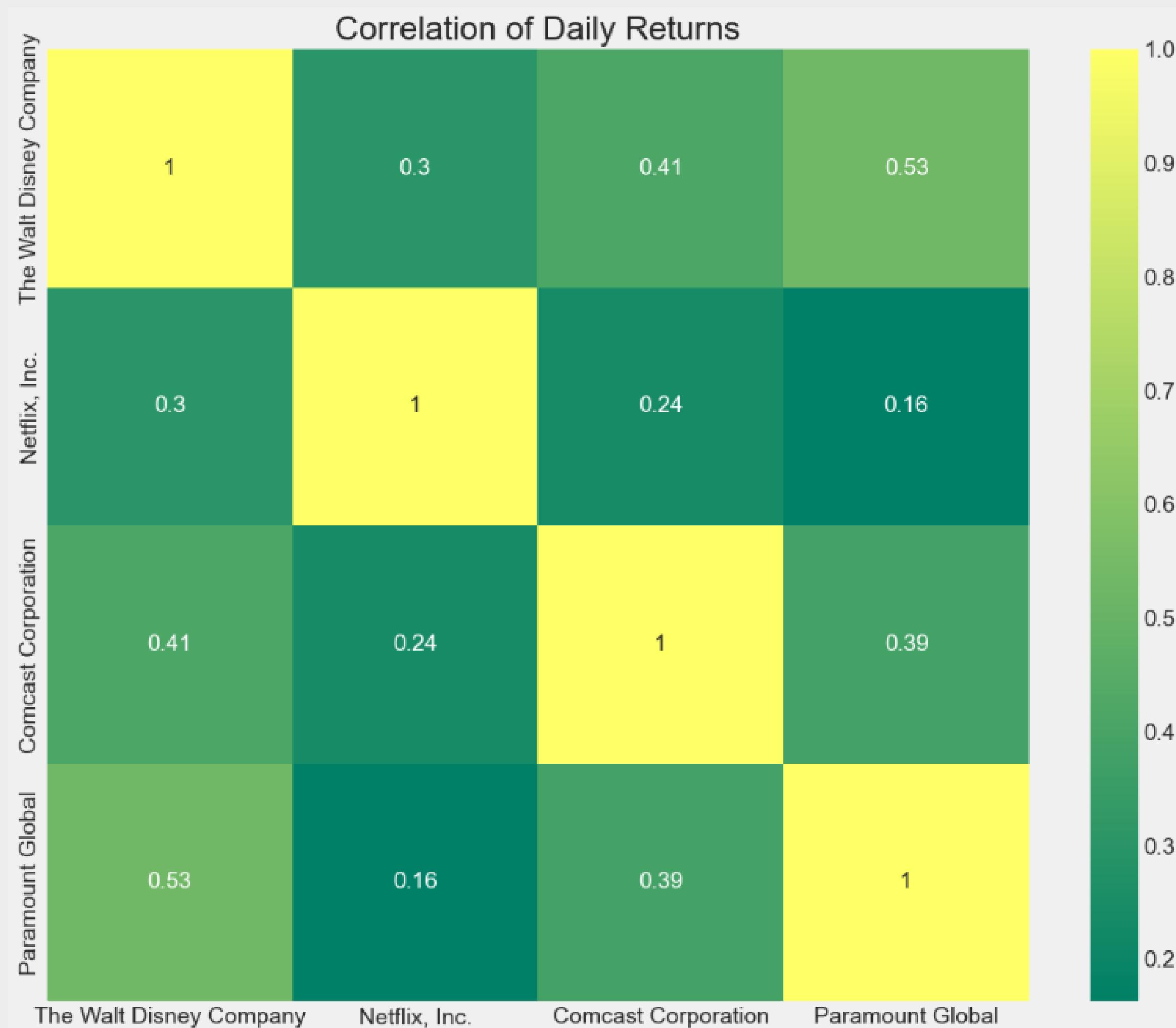
Paramount Global



Correlation of Daily Returns

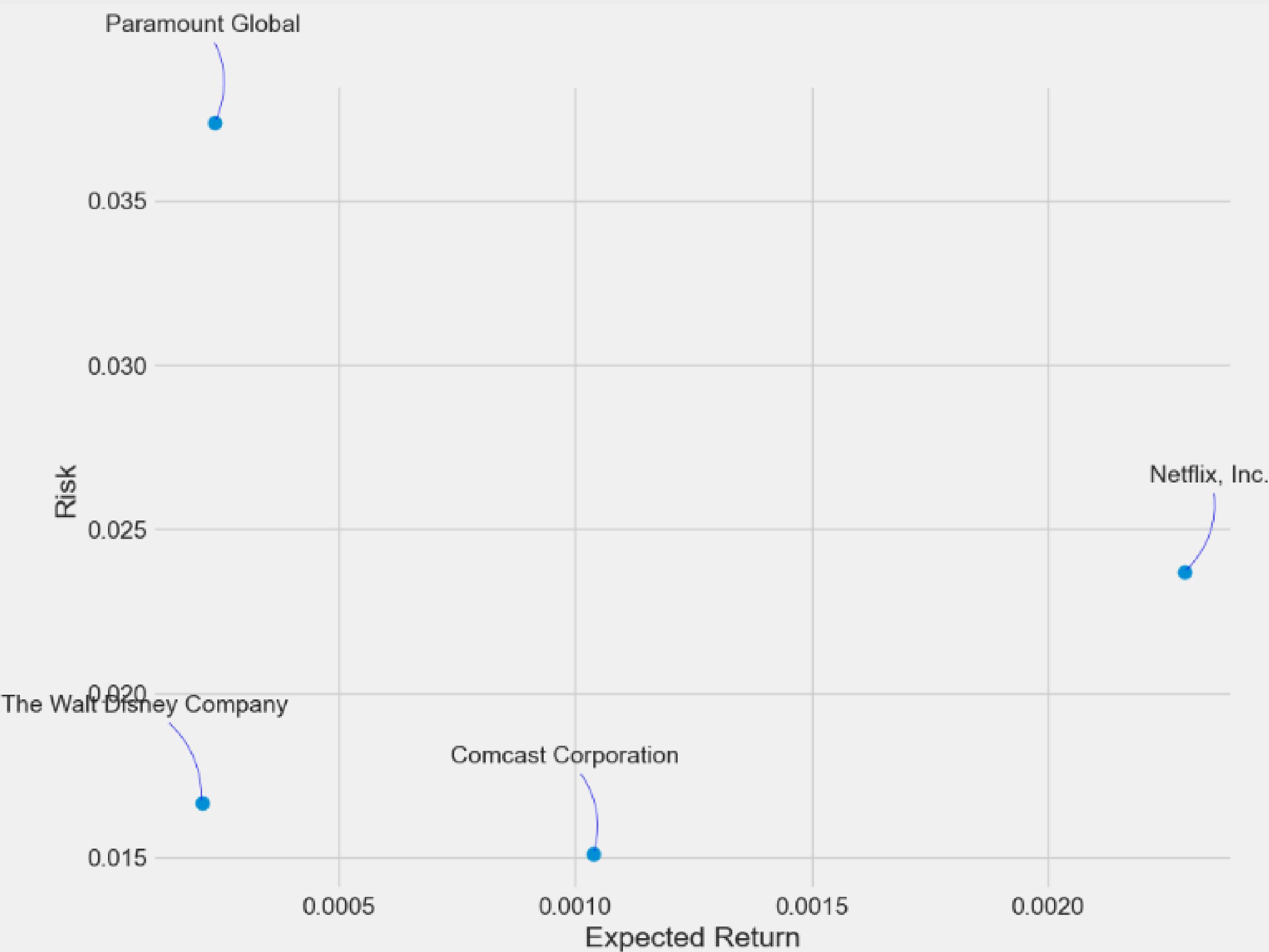


Correlation of Daily Returns



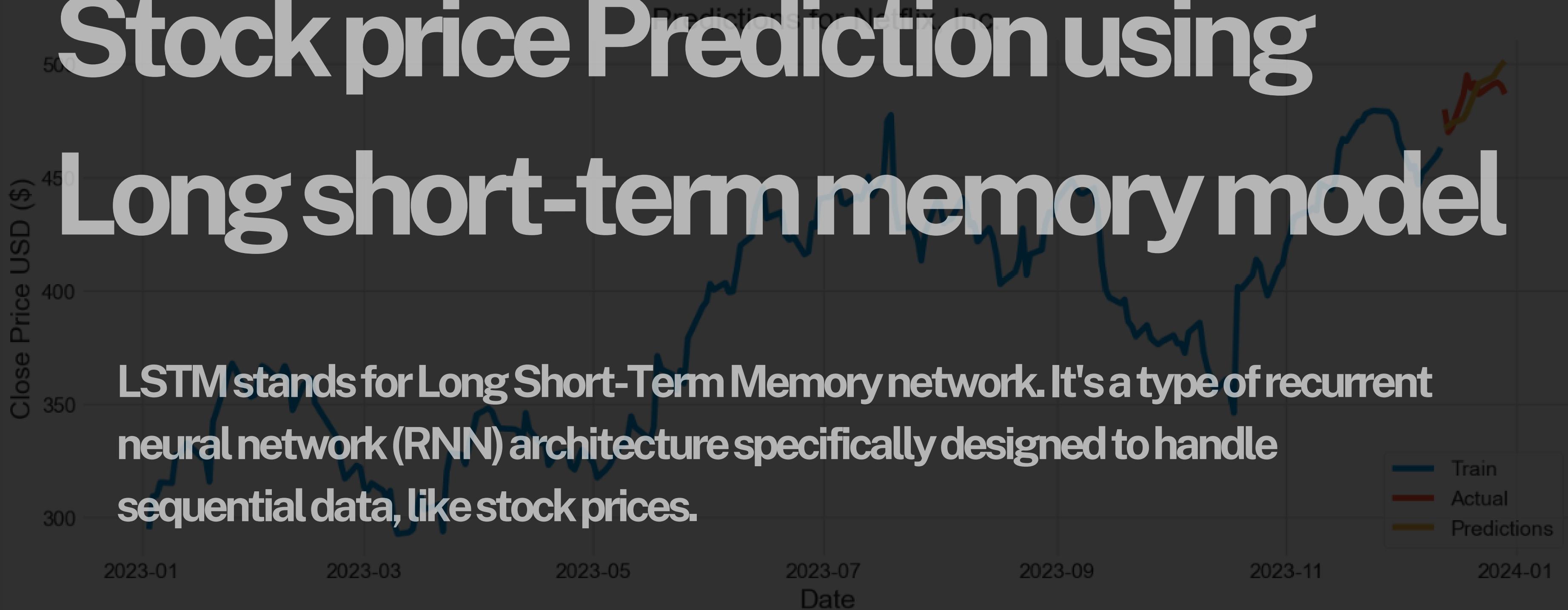
Risk vs Return





Stock price Prediction using Long short-term memory model

LSTM stands for Long Short-Term Memory network. It's a type of recurrent neural network (RNN) architecture specifically designed to handle sequential data, like stock prices.



Predictions for Netflix, Inc.



Mean Squared Error (MSE):

71.14118818116064





Conclusion





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Thank you very much!

