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Description automatically generated

https://brand.netflix.com/en/assets/logos/

**Introduction**

Netflix began as an idea in 1997 by Reed Hastings and Marc Randolph that would give consumers the ability to rent DVDs through the mail via a website instead of having to go to a store. Their website and business officially launched in 1998 with their subscription service coming soon after in 1999 that offered unlimited DVD rentals without due dates, late fees, or monthly rental limits. The company was brought public on May 23, 2002, with an initial public offering (IPO) on NASDAQ for the ticker symbol: NFLX. Innovative features to the user experience over the years, such as a personalized movie recommendation system based on customer’s movie ratings, and successfully transitioning the company’s focus to streaming services has helped to bolster revenue as well as the stock price to its current level.

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**Summary of Project Intention**

The intended purpose of this project is to take a closer look at the traded price performance of Netflix (NFLX) since its IPO in May of 2002 through April of 2024. This was done by calculating various metrics that utilize the available objective data. A comparison was made to the performance of the overall market during the same period by using an ETF that tracks the S&P500 (ticker symbol: SPY).

**Dataset Examination and Profiling**

**Data Availability and License**

The NFLX data can be seen [here] and the dataset license can be seen [here]

The SPY data can be seen [here] and the dataset license can be seen [here]

Both tables used in this analysis had a similar format and consisted of quantitative and structed data with columns showing daily trading data for Date, Open, High, Low, Close, and Volume. The SPY table contained additional columns parsing out the date components but were not used for the purposes of this project.

The SQL code that was used during all phases of this project can be seen [here]

The schemas were checked for both tables and it was found that during the import process the datatypes for all columns in the NFLX table were set by default to varchar (50) and were adjusted accordingly. The columns in the SPY table were imported using the proper datatypes and did not require any adjustment.

While calculating descriptive statistics of both tables it was verified that they were properly limited to the same start and end dates, as well as the same number of rows. Thereby ensuring the accuracy of the data being used for the sake of performance comparison.

Both tables were checked for any NULL values, and none were found.

Both tables were checked for duplicate rows based on the ‘Date’ column, and none were found.

**Cleaning and Manipulation of Data**

The name of the NFLX table was changed from ‘nflx\_stock\_price’ to simply ‘nflx’ to match the naming convention of the ‘spy’ table as well as to ease query writing.

The columns in the NFLX table schema were adjusted to their proper datatypes.

The ‘Adj Close’ column in the NFLX table was found to be identical with the ‘Close’ column and was removed from the table.

The extra date-related columns in the SPY table were removed.

**Analysis and Discussion**

The dates included in the comparison analysis were standardized to ensure that the same period was being considered for each table. Specifically, between May 23, 2002 (the IPO for NFLX), and April 30, 2024 (the limit of the dataset available for SPY).

Some general exploratory data analysis was done by calculating summary statistics. Both tables were examined while finding values for the averages of opening and closing prices over the trading life of NFLX, as well as the minimum and maximum values of highs and lows. However, given the range of values that NFLX has held since its IPO as well as the amount of time that has passed since, the application of those calculations is limited to practicing the theory that frames this report.

The 30-, 50-, and 200-day simple moving averages were calculated.

[Insert Chart]

A simple moving average can be used to inform the user of various important information. Moving averages can be used to determine or verify trends, or potential changes in trends. In very general terms, the trend is bullish if the values of the moving average are increasing, and bearish if the values are decreasing.

Simple moving averages can be used to determine levels of support and resistance for technical analysis of stock charts. Stock trading values tend to “bounce” off moving average lines and act as either lower support in a bullish trend or upper resistance in a bearish trend.

When multiple moving averages of different time frames are utilized, they can be used as indicators for buy or sell signals. When a shorter-term moving average crosses above a longer-term moving average, this could be interpreted as a buy signal, or what is called a “Golden Cross”. Conversely, a shorter-term moving average crossing below a longer-term moving average could be a sell signal, or what is referred to as a “Death Cross”. This concept could also be applied to a situation where a trader wants to incorporate a stop-loss strategy. This can be done on many modern trading platforms where a sell order could be triggered by a set of conditions being met, such as a short-term moving average crossing below a longer-term moving average.

Since no single indicator should be used in technical analysis as the sole basis for either a buy or sell signal, moving averages are often used as confirmation signals when used in conjunction with other technical indicators.

Moving averages of different time periods can be useful in different types of trading. For example, using a 20- and 30-day moving average together can be useful for short-term swing trading, while a 50- and 200-day moving averages can be used together for more longer-term trading.

The running historical volatility was calculated using a 30-day timeframe.

[Insert Chart]

Historical volatility (HV) is a measure of the extent to which the price of an asset has fluctuated over a given time period. Basically, it’s a quantification of how much the asset price has moved around in a past given time period.

The HV value is significant to trading and investing for several different reasons. One way that it can be used is to assess the potential risk of an individual asset. An asset with a higher HV value would be one that has historically shown a potential for higher price swings, which some traders/investors might view as having higher risk. Conversely, an asset that has historically experienced smaller price swings would have a lower HV value and could be interpreted as having a lower risk level. However, it should also be noted that some tradeable products will show swings in volatility as well as price. Some stocks enter periods of lower HV that can precede a significant price move, such as leading up to a corporate announcement before releasing earnings reports, anticipated product launch, economic indicators, or FDA drug approval.

HV, as a backward-looking metric of volatility, is different from Implied Volatility (IV) which is a forward-looking metric of volatility that is used in the pricing of option contracts on equities and indices. However, the two can be compared to try and find instances of potential mispricing of options, which may be considered undervalued when HV is higher than IV and overvalued when the opposite is true.

How often in a given timeframe does NFLX trade within 1 STD?

6 months = 75.8% of trading days

12 months = 78% of trading days

The yearly percentage return was calculated for each year since the NFLX IPO. A point to note is that both the years 2002 and 2024 returns were based on incomplete periods.

[Insert Chart]

To assess the historical long-term performance of NFLX stock, the potential return was analyzed using a hypothetical $100 investment made on the IPO date, May 23, 2002.

The results showed that a $100 investment in NFLX on May 23, 2002, would be worth approximately $54,056.70 as of April 30, 2024 (split adjusted), representing a significant gain of over 53,957%. This demonstrates the substantial long-term growth of NFLX stock over the past 22 years.

The same calculations were made using data from SPY as well as the same starting date of May 23, 2002, and a hypothetical investment of $100 and was found to be worth $690.30 as of April 30, 2024. This represents a 590% appreciation in value.

**Additional Considerations:**

It's important to note that past performance is not indicative of future results. NFLX has seen a historic rise in value that most likely will not be repeated any time soon to an identical degree barring a drastic shift in market conditions and a massive show of business flexibility on behalf of the company’s management to efficiently and effectively leverage new and existing revenue streams.

NFLX Q1 2024 financial statements can be seen [here](https://ir.netflix.net/financials/financial-statements/default.aspx).

**Recommendations and Possible Further Actions Based on Analysis**