

Meaning and Process of Value Investing

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Abstract. The research focuses on the evolution of a certain company's stock price time series. The purpose of this study is to measure and evaluate the growth in Apple Inc. stock prices using a time series approach. Data is provided on a daily basis from January 2020 to July 2022. According to the statistics, Apple stock prices climbed progressively from 2020 to 2022. The most prevalent reason for a spike in stock prices is the introduction of a new product or service to the worldwide market. On the other hand, the cause of the stock price decrease is consumer unhappiness, an excess of demand over supply, or the political atmosphere. The investigation of time series throughout the economic crisis demonstrates that, owing to the firm's development, innovation, and regular introduction of new goods into the market, the company and stock prices were not significantly affected by the crisis. Naturally, there were some market fluctuations, but by the end of 2022, the corporation's stock had reached its highest level in history. During the global epidemic of, time series analysis demonstrates a continual rise in stock prices. Currently, the firm offers an expanding variety of products and creates new services to let us work, study, or enjoy ourselves from the comfort of our own homes during these tough times.

Keywords: Value Investing; Meaning; Process.

1. Introduction

Zero-Cost Collar & Covered Call

Assume today is August 1st 2022 and on January 2nd 2020 you purchase 10,000 shares of Apple computer (AAPL).

2. Size of Initial Investment

An initial investment is the first quantity of money needed to open an account or begin a buy-in agreement[1][2][3]. The same initial contribution generates ownership in an investment, but it is often done with the goal of using it to fund future growth. In terms of stocks, an initial investment is often not much more than a primary deposit. Most financial institutions only provide checking, savings, or other accounts to customers who are determined to keep something in them, even if it is just a tiny amount. A payment as well as the application materials is frequently required.

January 2nd 2020

Table 1. Size of Initial Investment

Price of Share	\$74.06
Number of Shares	10000

Initial investment = \$740,600

The total value of the investment on January 2nd 2020 was \$740,600.

3. The Return on Investment

Return on investment is the main measure of the success of any endeavor (ROI). This ratio is used to analyses an investment's return or loss in relation to its cost. Analyzing the current or anticipated return on an investment is useful when making decisions on whether to launch a new project, evaluate the performance of your stock portfolio, or take into account a firm investment.

1st August 2022 Value of Investment = \$1,615,100.00

2nd January 2020 Initial Investment = \$740,600.00

Return on Investment = 118%

The total return from January 2020 to 1st august was 118%.

4. Annual Return on Investment

Earnings on an investment over a year are referred to as the annual rate of return (ROR) and are frequently represented as a percentage. Gains or losses relative to the initial investment or starting amount over the holding period under study will determine the sign of that percentage. The duration could be the entire year, or it could start on the date of the investment and end a year later.

Table 2. Annual Return on Investment

Ending Value	\$1,615,100.00
Initial Value	\$740,600.00
Number of Years	2.58

Annual Return on investment $((1615100/740600) ^ (1/2.58))-1 = 37\%$

The annual rate of return is limited since it only takes a percentage increase over a 12-month period into account. Investors could be curious to understand more about growth factors, increases in compound interest over a period of years, and other subjects.

5. Monthly Value of Your Investment

Monthly return on investment = $((37\%/100) + 1) ^ (1/12))-1 = 4.48\%$

Table 3. Monthly value Return

Months	Monthly value Return
Jan - 2020	\$773,788.69
Feb - 2020	\$808,464.68
Mar -2020	\$844,694.61
Apr-2020	\$882,548.12
May-2020	\$922,097.97
June-2020	\$963,420.18
July-2020	\$1,006,594.17
Aug-2020	\$1,051,702.92
Sept-2020	\$1,098,833.15
Oct-2020	\$1,148,075.43
Nov-2020	\$1,199,524.42
Dec-2020	\$1,253,279.01
Jan - 2021	\$1,309,442.52
Feb - 2021	\$1,368,122.89
Mar -2021	\$1,429,432.93
Apr-2021	\$1,493,490.46
May-2021	\$1,560,418.62
June-2021	\$1,630,346.05
July-2021	\$1,703,407.16
Aug-2021	\$1,779,742.37
Sept-2021	\$1,859,498.41
Oct-2021	\$1,942,828.58

Nov-2021	\$2,029,893.04
Dec-2021	\$2,120,859.15
Jan - 2022	\$2,215,901.74
Feb – 2022	\$2,315,203.50
Mar -2022	\$2,418,955.29
Apr-2022	\$2,527,356.54
May-2022	\$2,640,615.60
June-2022	\$2,758,950.17
July-2022	\$2,882,587.69



Fig 1. Monthly Investment Return

On average the monthly value return is increasing despite the profit or loss on month to month.

6. Plot Monthly Return of Investment



Fig 2. Return on investment

Table 4. Monthly return on investment

Months	Monthly Return
Jan – 2020	4.48%
Feb – 2020	9.16%
Mar -2020	14.06%
Apr-2020	19.17%
May-2020	24.51%
June-2020	30.09%
July-2020	35.92%
Aug-2020	42.01%
Sept-2020	48.37%
Oct-2020	55.02%
Nov-2020	61.97%
Dec-2020	69.22%
Jan – 2021	76.81%
Feb – 2021	84.73%
Mar -2021	93.01%
Apr-2021	101.66%
May-2021	110.70%
June-2021	120.14%
July-2021	130.00%
Aug-2021	140.31%
Sept-2021	151.08%
Oct-2021	162.33%
Nov-2021	174.09%
Dec-2021	186.37%
Jan – 2022	199.20%
Feb – 2022	212.61%
Mar -2022	226.62%
Apr-2022	241.26%
May-2022	256.55%
June-2022	272.53%
July-2022	289.22%

Similar to the monthly value return, monthly return on investment in terms of percentage is also increasing on average with a positive slop. The average monthly return is increasing despite the month on month losses or gains.

7. Month Maximum Loss

Any trader, regardless of skill level--be it seasoned, novice, or somewhere in between—cannot totally prevent losses. Since they are aware that losing their hard-earned money is inevitable, disciplined traders are able to take losses without becoming upset. However, there are organized ways to guarantee that losses are maintained to a minimal.

Table 5. Month Maximum Loss

Months	Share price	Value of Investment	Monthly loss
Dec-19	73.41	734,100	
Jan-20	80.97	809,700	10.30%
Feb-20	68.34	683,400	-15.60%
Mar-20	63.57	635,700	-6.98%
Apr-20	73.45	734,500	15.54%
May-20	79.49	794,900	8.22%

Jun-20	91.2	912,000	14.73%
Jul-20	106.26	1,062,600	16.51%
Aug-20	129.24	1,292,400	21.63%
Sep-20	115.81	1,158,100	-10.39%
Oct-20	108.86	1,088,600	-6.00%
Nov-20	119.05	1,190,500	9.36%
Dec-20	133.72	1,337,200	12.32%
Jan-21	131.96	1,319,600	-1.32%
Feb-21	121.26	1,212,600	-8.11%
Mar-21	122.15	1,221,500	0.73%
Apr-21	131.46	1,314,600	7.62%
May-21	124.61	1,246,100	-5.21%
Jun-21	136.96	1,369,600	9.91%
Jul-21	145.86	1,458,600	6.50%
Aug-21	153.12	1,531,200	4.98%
Sep-21	141.4	1,414,000	-7.65%
Oct-21	149.8	1,498,000	5.94%
Nov-21	165.3	1,653,000	10.35%
Dec-21	177.57	1,775,700	7.42%
Jan-22	174.78	1,747,800	-1.57%
Feb-22	165.12	1,651,200	-5.53%
Mar-22	174.61	1,746,100	5.75%
Apr-22	157.65	1,576,500	-9.71%
May-22	148.84	1,488,400	-5.59%
Jun-22	136.72	1,367,200	-8.14%
Jul-22	162.51	1,625,100	18.86%

Maximum monthly loss= -15.60%

Maximum monthly loss was in Month of February 2020, the loss was 15.6% month on month.

8. Month Maximum Return

ROI may be used by investors to assess the likelihood that a proposed investment will be profitable. It may also be used as a tool for contrasting previous profits. The ROI can go back a number of years and give a more complete picture of the investment's long-term performance if a prospective investor is thinking about making an investment in a certain mutual fund. Because ROI may change over time, it can also be helpful in predicting when a significant investment disruption will happen. A high ROI% would indicate a potential buy, whilst a low ROI would indicate that selling the investment or avoiding it entirely is the best course of action. ROI is used to compare investments that perform well and those that don't. Everyone, even fund managers and financial advisors, may use this to make the best investment decisions.

Maximum monthly return 21.63%

Maximum monthly return was in Month of August 2020, the return was 21.63% month on month.

9. Suppose Until June 21st 2024 You Want to Protect 80% of Your Gains. What Put Option Will You Buy and How Much Will it Cost

The buyer of a put option has the right, but not the obligation, to sell (or sell short) an agreed-upon number of shares of the underlying securities at an agreed-upon price within a certain time frame.

The buyer of a put option has the right to sell the underlying security at the strike price. Put options can be traded on many different underlying assets, including equities, currencies, bonds, commodities, futures, and indexes. In contrast to a put option, which gives the holder the right to sell the underlying securities at a certain price before the contract’s expiration date, a call option gives the holder the right to buy those securities at a specified price before the contract’s expiration date.

Put Option to protect 80% gain

80 percent gain will be = \$1,333,080 (740,600*1.8)

Per share price= \$133.31

The price to protect 80 percent gain will be \$133.31 per share.

10. Suppose you are Prepared to Give up Some of Your Upside by Selling a Call in Order to Pay for Put That You are Purchasing in Part 8 Above. What Should be the Strike of this Call

A sort of option that gains value as a stock rises is called a call option. The most popular sort of options, they let the owner to fix a price to purchase a specific stock by a particular date. Call options are desirable because they may increase rapidly in value on a slight increase in the stock price. This makes them a choice among traders who are seeking a significant profit. There are 100 shares of the underlying stock per option contract. Exchanges provide pricing for options based on share price rather than the total cost of ownership. For instance, an option may cost \$0.75 when it is posted on the exchange. Consequently, the price to purchase one contract will be (100 shares * 1 contract * \$0.75), or \$75.

Strike price determined price at which the shares of stock will be exchange if the options is exercised. If we see the above part 8, to secure the 80% gain on investment we can set the minimum threshold price \$133.31. But the strike price depends on the call and put options. For the call options price below the stock price (\$133.31). So the strike price will be below \$133.31.

11. Suppose You Sell a Call Maturing on June 21st 2024 with Strike at 20% Above the Closing Price on August 1st 2022. Plot the Graph of the Return of Your Initial Investment Plus This Call at the Above Expiration Data

Put and call options must have the same underlying asset, strike price, and expiration date in order to be considered members of the same class. The put-call parity can only be determined using a special formula that only applies to European options. These options are regarded as belonging to the same class since they have the same underlying asset, strike price, and expiration date. This restriction does not apply to American options, which can be exercised at any moment before the expiry date.

Strike price at 20% above the closing price = \$195.01

Table 6. Strike Price p

Months	Strike Price p
Jan-22	\$ 139.82
Feb-22	\$ 132.10
Mar-22	\$ 139.69
Apr-22	\$ 126.12
May-22	\$ 119.07
Jun-22	\$ 109.38
Jul-22	\$ 130.01

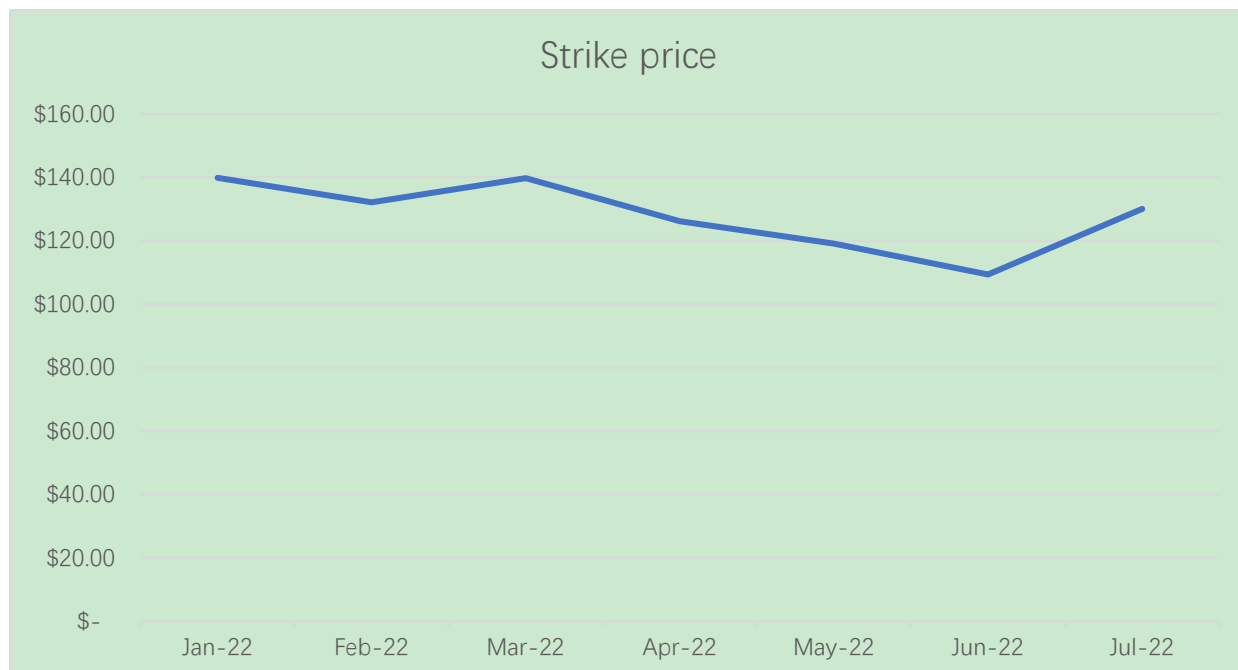


Fig 3. Strike price

References

- [1] Hickish, B., Fletcher, D.I., Harrison, R.F., 2022. A methodology to optimize a rail network specification for maximum passenger satisfaction and reduced initial investment. *Journal of Rail Transport Planning & Management* 21, 100279.
- [2] Perera, A.T.D., Attalage, R.A., Perera, K.K.C.K., Dassanayake, V.P.C., 2013. Designing standalone hybrid energy systems minimizing initial investment, life cycle cost and pollutant emission. *Energy* 54, 220-230.
- [3] Yigezu, Y.A., Mugera, A., El-Shater, T., Aw-Hassan, A., Piggan, C., Haddad, A., Khalil, Y., Loss, S., 2018. Enhancing adoption of agricultural technologies requiring high initial investment among smallholders. *Technological Forecasting and Social Change* 134, 199-206.