

Project Documentation

Overview

Project Name

Assessment Task I: Data Visualisation Foundations

Company

Infratil Limited (IFT)

Project Dates

Start Date: Jan 1, 2024

End Date: Dec 31, 2024,

Background

Infratil Limited is an infrastructure investment company investing in 'ideas that matter'. Our active management delivers long-term returns of 11–15% a year.

Objectives

- Data collection and storage
- Exploratory data analysis
- Data visualisation
- Company stock analysis report

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Executive Summary

This report provides a comprehensive analysis of investment performance in **Infratil Limited (IFT)** stock, focusing on the impact of both single and multiple trading strategies on overall returns. Infratil, a leading infrastructure investment company, has demonstrated consistent growth, making it a valuable stock for investors seeking long-term capital appreciation and dividend income. The study evaluates key trends in price movements, portfolio value changes, and dividend contributions to assess the effectiveness of different trading strategies.

The analysis includes a **single-trade strategy**, where an initial investment of \$1,000 on January 2, 2024, resulted in a **130.77% return**, reaching a final portfolio value of \$1,307.73 by October 29, 2024. This return was achieved through capital gains from share price appreciation and accumulated dividends.



In contrast, the **multiple-trade strategy** involved reinvesting profits from a series of strategic buy-and-sell decisions throughout the year. This approach maximized returns, achieving a **175.66% profit**, with the portfolio value growing to \$1,755.60 by the end of the year. The results demonstrate the advantage of active trading in leveraging price fluctuations for enhanced gains.



The report utilizes various **data visualization techniques** to illustrate trends and performance metrics effectively. Bar charts are employed to represent total portfolio values and profit growth, while line charts track stock price movements over time. Annotations highlight key trading points, including buy and sell dates, share prices, and dividend earnings. Additionally, percentage indicators and trendlines have been used to enhance data interpretation, making the insights more accessible to investors.

Introduction

Infratil Limited is a New Zealand-based infrastructure investment company that actively manages a diverse portfolio of assets across the energy, digital infrastructure, transport, and social infrastructure sectors. Established in 1994, Infratil focuses on long-term, high-growth investments in industries that provide essential services and generate sustainable returns. The company has a strong presence in both domestic and international markets, with significant holdings in renewable energy, data centers, airports, and healthcare facilities.

This report analyzes the performance of Infratil Limited's stock through strategic trading and investment decisions. The study examines price movements, dividend contributions, and portfolio growth based on single trade and multiple trades executed throughout the investment period. Through various visualizations and analytical techniques, this report provides insights into the profitability of trading Infratil stock and highlights key trends that influenced investment outcomes.

Data

The dataset contains 254 records and 9 columns which provide stock price information for the year 2024. The dataset is sourced from a stock market database from Australian Securities Exchange.

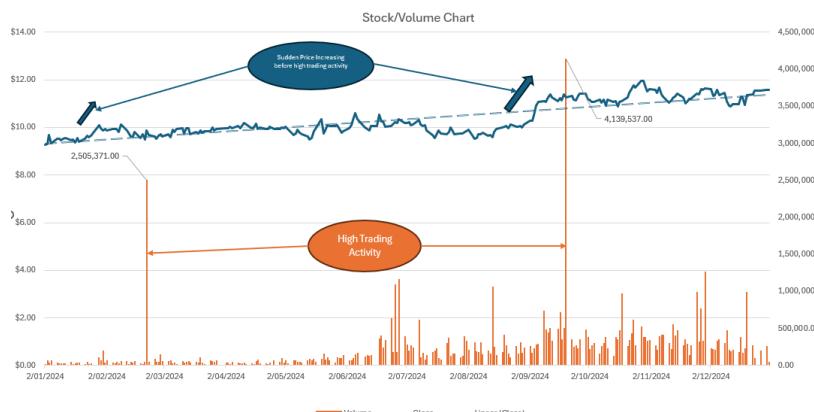


The columns are

- ASX Code (Stock ticker symbol)
- Trading date
- Open, High, Low, Close for stock prices
- Volume (Number of shares)
- Market Capitalization (\$m): Market cap in millions
- Shares on Issue (Number of shares available).

First the dataset downloaded was not sorted by the date from the oldest. So, I sorted it out by using format. Then the prices of Open, High, Low, Close, and Market Capitalization are not in the format of Currency, so I also sorted that out which will help me with the data visualization later the assessment.

Stock vs Volume



- The chart visualizes the relationship between stock price movement and trading volume over time.
- A linear trendline helps illustrate the overall upward trend in stock prices.
- Annotated insights highlight key patterns in trading activity and price behavior.
- Sudden price increases are observed before high trading activity, indicating potential investor reactions.
- Volume spikes are marked to emphasize significant market movements.

Dual-Axis Chart:

- The primary Y-axis (left) represents stock price.
- The secondary Y-axis (right) represents trading volume.
- Helps compare two different metrics in one visualization.

Annotations & Callouts:

- Speech bubbles & arrows emphasize key insights, making the data more interpretable.
- Highlights sudden price movements and high trading activity zones.

Trendline (Linear Regression)

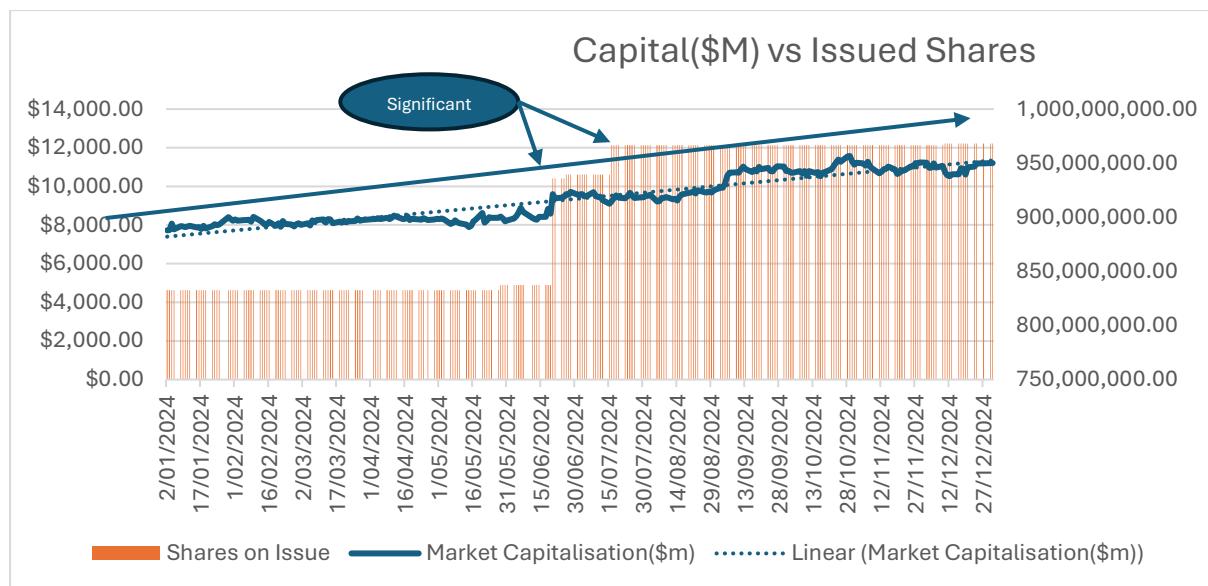
Bar & Line Chart Combination:

- Bars (orange) represent trading volume, while lines (blue) represent stock price.

Labeled Data Points:

- Specific price and volume levels are labeled to add context.

Capital vs Issued Shares



- The chart visualizes the market capitalization (\$M) against shares on issue over time.
- A linear trendline is used to show the overall market capitalization growth.
- A significant increase in market capitalization is highlighted with annotations.
- A noticeable rise in shares on issue is visible, potentially linked to capital-raising events or stock issuance.
- The market capitalization follows an upward trajectory, indicating potential growth in valuation.

This chart employs a mix of techniques to enhance storytelling and emphasize key trends, much like the Stock/Volume Chart:

Dual-Axis Chart – Just like the Stock/Volume Chart, this graph uses two vertical axes:

- Left Y-axis: Market capitalization
- Right Y-axis: Issued shares

Line & Bar Combination – Similar to how volume was shown as bars and stock price as a line:

- Market capitalization is a line graph, showing its movement over time.
- Shares on issue are represented by vertical bars, making stock issuance visually distinguishable.

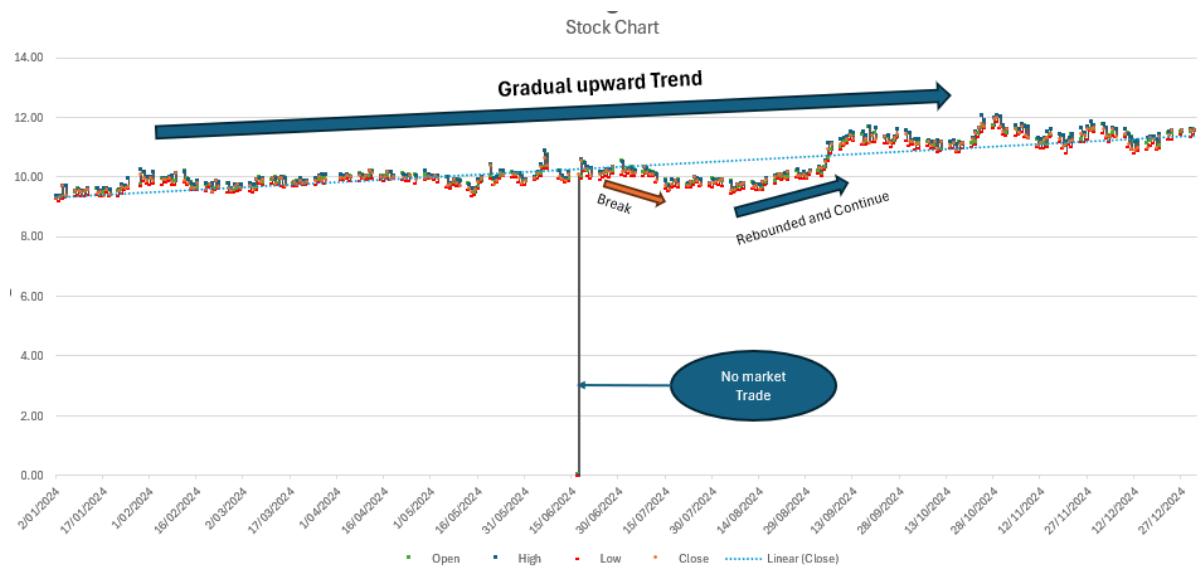
Trendlines: Just like in the Stock/Volume Chart.

Annotations & Callouts – Important events are highlighted with speech bubbles and arrows.

Labeled Data Points – Specific values, such as total market cap and key inflection points, are labeled to provide context.

The Capitalization vs. Issued Shares chart reveals a steady increase in market capitalization, indicating strong company growth over time. A significant jump mid-year suggests a major financial event. There is also a simultaneous spike in shares on issue. Despite the increase in shares issued, the company's overall market value continued to rise, showing strong investor confidence. This trend suggests that the company is actively growing, either through internal performance improvements or strategic external actions.

Stock Chart



This Stock Chart utilizes various visualization techniques to highlight key trends, patterns, and anomalies in stock movements over time.

Data Visualization Techniques Used

1. Candlestick Chart Elements

- The chart uses open, high, low, and close price markers, each represented with different colors.
- This helps in understanding stock price fluctuations within each period.

2. Trendlines & Linear Growth Indicator

- A dotted linear trendline is included to indicate the overall upward trajectory of the stock price.
- This is like trendline usage in previous stock-related charts.

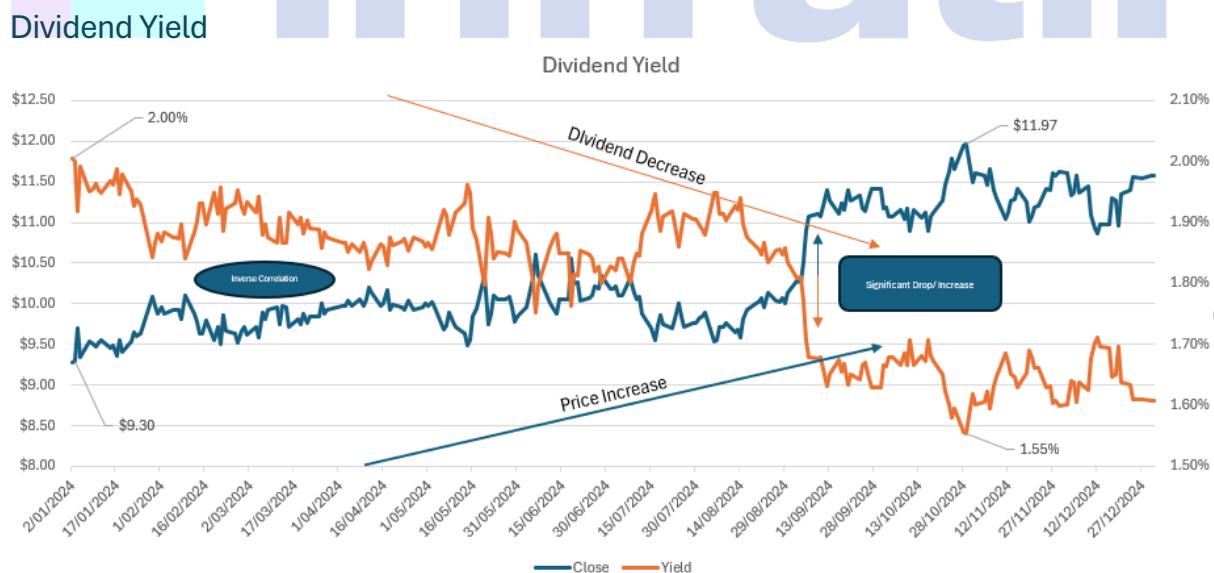
3. Annotations & Callouts for Key Events

- "Gradual Upward Trend": A large arrow visually reinforces the long-term increase in stock price.
- "Break Around": A red callout highlights a short-term price drop, making it clear where fluctuations occurred.
- "Rebounded and Continue Rising": Another annotation marks the stock's recovery after a dip, indicating resilience.
- "No Market Trade": A large blue label is used to highlight a period with no trading activity, making anomalies stand out.

4. Axis Formatting & Grid Layout

- The X-axis represents time, showing the progression of stock movements.
- The Y-axis displays price levels, making it easy to interpret market trends.

The Stock Chart illustrates a gradual upward trend in stock prices, reflecting consistent market confidence and positive performance over time. A brief dip, marked as a "Break Around," indicates short-term volatility, but the stock quickly rebounded and continued rising, demonstrating resilience. The presence of a no market trade period suggests a temporary trading stop. Despite these fluctuations, the overall trend remains positive, supported by a steady increase in closing prices. This suggests that investors remain optimistic, and the stock is maintaining long-term growth momentum.



- Dual-Axis Chart: The chart utilizes two vertical axes, with the left axis representing the stock's closing price and the right axis showing dividend yield, allowing for a clear comparison of their relationship.
- Line Charts: Both stock price and dividend yield are displayed as line graphs to highlight trends and fluctuations over time.

- Annotations & Labels: Important data points, such as the highest and lowest prices and yields, are annotated for clarity.
- Directional Arrows: Arrows indicate key movements, such as the price increase and dividend decrease, making trends visually intuitive.
- Highlighted Events: The inverse correlation and significant price/yield shift are emphasized with callouts to direct the viewer's attention to critical insights.

The Dividend Yield Chart illustrates the inverse correlation between stock price and dividend yield. As the stock price increased from around \$9.30 to a peak of \$11.97, the yield simultaneously decreased from 2.00% to around 1.55%, reflecting the typical market response where higher stock prices compress dividend yields. A notable mid-year shift suggests a significant market event, such as an earnings report or dividend policy adjustment, that temporarily disrupted this trend. Overall, the data suggests that investor demand for the stock increased, prioritizing capital appreciation over dividend returns.

Yearly-Portfolio

- Bar Chart: Used to represent the total portfolio value at the beginning and end of the year, making it easy to compare the growth in value over time.
- Line Chart Overlay: The profit percentage trend is displayed with a line connecting the two points, visually emphasizing the growth rate.
- Callout Label: A large, bold "126.49% Profit!!!" callout in the center highlights the key takeaway of the chart.
- Annotations & Labels: The exact values of the total portfolio at the start (\$1,000.00) and end (\$1,264.93) of the period are displayed on the bars for clarity.
- Dual-Axis Representation: The left axis represents portfolio value, while the right axis represents percentage profit, ensuring a clear distinction between absolute and relative growth.



Dividend earnings are calculated based on the number of shares owned and the dividend per share distributed by the company.

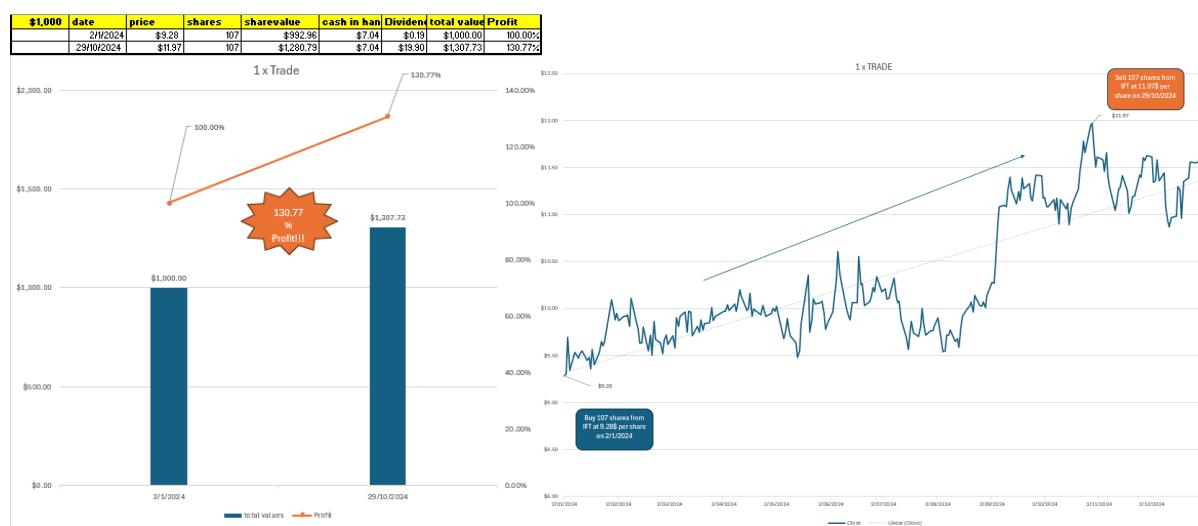
The formula is

$$\text{Dividend payout} = \text{Total Shares} \times \text{Dividend}.$$

In this portfolio, the investor holds 107 shares, and the total dividend earned is \$19.30 over the year. This suggests that the company provided periodic dividend payments, which were reinvested or added to the total portfolio value. Dividend earnings play a crucial role in overall investment returns, supplementing capital appreciation from stock price increases. By including dividends in the total profit calculation, the investor gets a more comprehensive view of the actual return on investment, as both price growth and passive income contribute to portfolio performance.

The Yearly Portfolio Chart showcases an impressive 126.49% profit over the year, indicating strong portfolio performance. The initial investment of \$1,000 grew to \$1,264.93, driven by an increase in stock prices from \$9.28 to \$11.57 per share. Dividend earnings also contributed, adding \$19.30 to total returns. The visualization effectively highlights the percentage increase in value, reinforcing the strong upward trajectory of the portfolio. This suggests that the selected investment strategy performed well, achieving significant growth within a single year.

1xTrade



The two charts illustrate the performance of a single trade executed in the market. The first chart is a bar and line combination graph that visualizes the initial investment, final portfolio value, and the profit percentage. The second chart is a line graph depicting the stock price movement over time, highlighting the buy and sell

points.

Techniques and Visualization Used:

- The bar chart represents the total value of the portfolio at the beginning and end of the trade.
- A line graph overlay with percentage labels emphasizes the growth in profit, showing a 130.77% increase over the trading period.
- The trend line in the second chart helps visualize the overall upward movement of stock prices.
- Annotations highlight key buy and sell points, making the trade execution strategy clear.

The trade started on January 2, 2024, with a purchase of 107 shares at \$9.28 per share, leading to a total investment of \$1,000. Over time, the stock market followed an upward trend, with fluctuations before reaching a peak. On October 29, 2024, the position was closed by selling the shares at \$11.97 per share, resulting in a significant profit. Additionally, dividends earned (\$19.90) using the same formula in Yearly-portfolio, during the holding period contributed to the total return, alongside cash in hand (\$7.04). The final total value, including dividends, reached \$1,307.73, reflecting a 130.77% return on investment. This analysis underscores the effectiveness of a well-timed trade, where strategic entry and exit points, combined with market trends, contributed to maximizing returns and achieving a 130.77% profit.

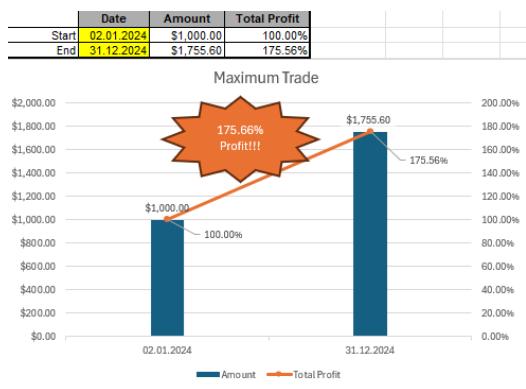
Maximum Trade

Trade Breakdown Chart



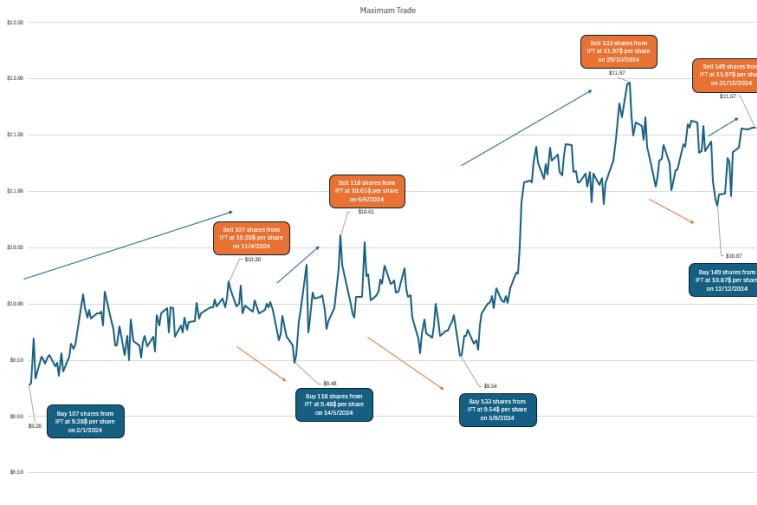
This chart details multiple trades conducted throughout the year, highlighting the price movements, share purchases, dividends, and cash in hand at different stages. The progressive increase in total value and profit percentage indicates a well-managed investment strategy, with each trade contributing to overall portfolio growth. The green profit trend line shows an upward trajectory, emphasizing successful trade execution.

Maximum Trade Growth



This bar chart visualizes the total value growth from \$1,000 to \$1,755.60, marking 175.66% profit. The emphasis is placed on the total increase over the year, reinforcing the effectiveness of the trading approach. The orange profit trend line further illustrates the sharp rise in value, making it clear that multiple trades contributed to maximizing returns.

Stock Price Movement with Trade Points



This line chart presents a detailed price trend of the stock overtime, with annotations marking key buying and selling points. It highlights the investor's strategic trade decisions, buying during lower price points and selling at peaks. The chart also shows price fluctuations, reinforcing the importance of timing in maximizing gains.

Maximum Trade Performance

- Initial Investment: \$1,000
- Final Portfolio Value: \$1,755.60
- Total Profit: 175.66%
- Number of Trades: Multiple trades executed at strategic points to maximize gains

The maximum trade analysis shows how disciplined trading decisions, combined with strong market performance, resulted in a substantial return. The visualizations effectively communicate how capitalizing on stock price trends and dividend earnings contributed to significant portfolio growth.

Based on the analysis of Infratil Limited's stock performance, this report highlights key investment opportunities and strategies that potential buyers and investors can leverage. The findings indicate that while a single trade approach yielded a strong return of 130.77%, a well-executed multiple-trade strategy significantly enhanced profitability, reaching a 175.66% return. This underscores the importance of strategic trading and market timing in maximizing investment gains.

Investing for the Long Term

Infratil's stock has steadily increased in value over time, making it a good choice for investors who want to grow their money over the years. The company also pays dividends, which are extra payments to shareholders. If investors hold onto their shares and reinvest these dividends, their earnings can grow even more over time.

Short-Term Trading Strategy

For those who actively follow the stock market, buying and selling Infratil shares at the right times can lead to even higher profits. This approach, as shown in this report, can result in better returns compared to just buying and holding stock for a long time.

Earnings from Dividends

Although dividends are not the main source of profit, they still add value, especially for long-term investors. Those who want a steady flow of income along with stock price growth should consider both these factors when deciding to invest.

Managing Risks

Stock prices do not always go up; they can also drop at times. This means investors should keep an eye on market trends and set limits to prevent big losses. Planning ahead can help protect their money during uncertain times.

Making Information Clearer

The report used charts and graphs to present stock trends in a simple and easy-to-understand way. Labels, colors, and highlights made key points stand out.

Spotting Important Trends

Line charts showed how Infratil's stock price moved over time, helping investors see the best times to buy and sell shares.

Comparing Profits

Bar charts helped show the difference in returns between buying and selling multiple times versus holding shares for a long period.

Showing Growth and Profitability

Percentage markers and trend lines helped investors see how much money they could make from different investment strategies.

Conclusion

This report shows that using data and careful timing when buying and selling stocks can help grow investments significantly. The findings confirm that Infratil is a strong company in the market with good potential for long-term growth. It is a great choice for investors who want to increase their money through both rising stock prices and regular dividend payments.

