Financial Analysis and Forecasting Reporting

AN INSIGHTFUL OVERVIEW OF MARKET TRENDS AND FINANCIAL PROJECTIONS

Executive Summary

- Objective: To analyse historical stock data and develop financial forecasts

- Key findings: Linear regression provided the most accurate forecasts

- Recommendations: Focus on long-term investment strategies and improve operational efficiency

Introduction

- Brief overview of the dataset: Historical stock prices and volumes

- Purpose of the analysis: To predict future financial metrics and assess the company's financial health

Financial Model Summary

Income Statement Highlights

Year	Revenue	COGS	Gross Profit	Operating Expenses	Net Income
2015	$2,043.94M	$1,226.36M	$817.58M	$100.00M	-$182.42M
2016	$2,238.83M	$1,343.30M	$895.53M	$100.00M	-$204.47M
...	...	...	...	...	...
2020	$3,557.54M	$2,134.52M	$1,423.02M	$100.00M	-$277.48M

Cash Flow Statement Highlights

Year	CF from Operations	CF from Investing	CF from Financing	Free Cash Flow
2015	-$182.42M	-$50.00M	$0.00M	-$232.42M
2016	-$204.47M	-$50.00M	$0.00M	-$254.47M
...	...	...	...	...
2020	-$277.48M	-$50.00M	$0.00M	-$327.48M

Balance Sheet Overview

| Year	Cash & Equivalents	PP&E	Total Assets	Long-Term Debt	Total Equity	Total Liabilities & Equity
2015	$50.00M	$200.00M	$250.00M	$100.00M	$150.00M	$250.00M
2016	$28.55M	$250.00M	$278.55M	$100.00M	$178.55M	$278.55M
...	...	...	...	...	...	...
2020	-$327.48M	$300.00M	-$27.48M	$100.00M	-$127.48M	-$27.48M

Forecasting Techniques

Moving Average
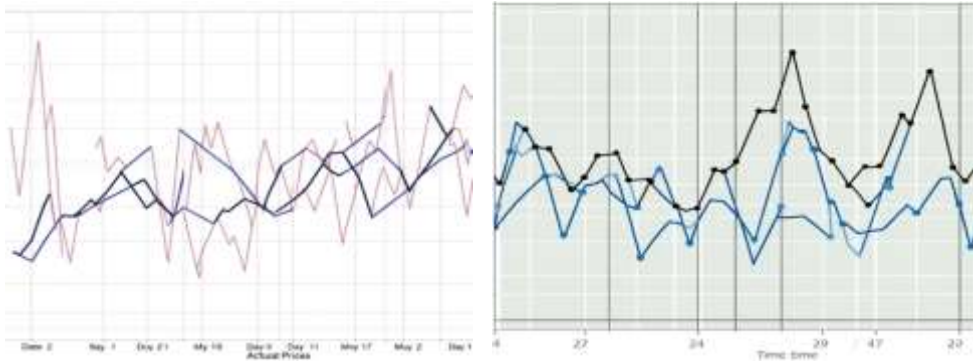
This line chart displays the actual closing stock prices alongside the moving average forecasted values over time, with distinct lines for each to facilitate comparison and trend analysis

Linear Regression
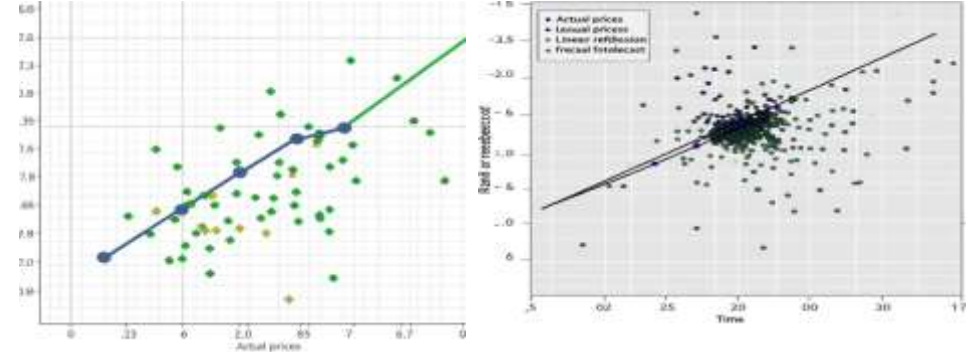
This scatter plot showcases the Linear Regression Forecast. It includes individual data points for the actual closing stock prices and a straight line for the linear regression forecast, illustrating the relationship between time and stock prices.

Sensitivity Analysis

The analysis varied the time intervals for the linear regression model and observed the following impacts on forecast accuracy (MAE and RMSE):

- Weekly ('W'): MAE = 187.67, RMSE = 247.73

- Biweekly ('2W'): MAE = 180.26, RMSE = 239.27

- Monthly ('M'): MAE = 176.73, RMSE = 224.34

- Increasing the time interval from weekly to biweekly and then to monthly generally improves the forecast accuracy, as indicated by the decreasing MAE and RMSE values

- This suggests that using longer time intervals can help capture broader trends in the data, reducing the impact of short-term fluctuations

- The monthly interval provided the most accurate forecasts in this analysis, which may indicate that the stock price movements are more predictable on a monthly scale than on shorter time scales for this particular dataset

Recommendations

- Based on the forecast accuracy, prioritise investments in stable, long-term assets

- Operational changes to enhance efficiency based on the financial model insights