Project 1:
Burshane Private Limited (BPL)

Programming for Finance — FIN 460

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INTRODUCTION

Burshane Private Limited is a leading company in the oil and gas marketing industry, with a strong presence in Pakistan and the surrounding region. Founded in 1966, the company has built a reputation for excellence in the distribution and marketing of a wide range of oil and gas products, including gasoline, diesel, kerosene, and cooking oil (*Burshane History – Burshane LPG (Pakistan) Limited*, n.d.).

With a team of experienced professionals and a commitment to meeting the highest standards of quality and customer service, Burshane Private Limited has established itself as a trusted partner for both domestic and international customers. The company operates a network of distribution centers and retail outlets across Pakistan, and it has developed strong relationships with key stakeholders in the oil and gas industry, including major oil and gas companies, government agencies, and other industry partners (*Burshane History – Burshane LPG (Pakistan) Limited*, n.d.).

In addition to its core business of oil and gas marketing, Burshane Private Limited is also involved in a range of related activities, including the import and export of oil and gas products, the development of new technologies and products, and the provision of technical and logistical support to customers. When it comes to stock performance, Fig.1 below shows the graph of BPL stock over the past 3 years.

Market data powered by capitalstake.com. Provided by PSX.

Figure 1: BPL stock prices over 3 years (PSX)

INDUSTRY OVERVIEW

Pakistan is a major oil and gas producing country, with the oil and gas sector playing a significant role in the country's economy. There are several oil and gas marketing companies operating in Pakistan, including both domestic and international firms. These companies are responsible for the distribution and sale of oil and gas products within the country. In 2020, these companies had a total revenue of $9.7bn (*Oil and Gas in Pakistan - Market Summary, Competitive Analysis and Forecast to 2025*, n.d.). Out of these companies, 9 are listed through Pakistan Stock Exchange(*OIL AND GAS MARKETING COMPANIES*, n.d.).

The major players in the oil and gas marketing industry in Pakistan include Pakistan State Oil (PSO), Shell Pakistan, and Total Parco Pakistan. These companies have a strong presence in the market and are involved in the distribution and sale of various oil and gas products, including gasoline, diesel, and natural gas.

In addition to these large companies, there are also a number of smaller, independent oil and gas marketing firms operating in Pakistan. These companies often specialize in the distribution and sale of specific products, such as aviation fuel or LPG(*OMC Sector Study November 2019_1573733618.Pdf*, n.d.).

The oil and gas marketing industry in Pakistan is regulated by the Oil and Gas Regulatory Authority (OGRA), which is responsible for setting and enforcing industry standards and guidelines.

Overall, the oil and gas marketing industry in Pakistan plays a vital role in the country's economy and is an important contributor to the country's energy needs. And as for the future of this sector, the earnings in this sector are forecasted to decline by 6.3% per year(*Pakistani (KSE) Oil and Gas Industry Analysis*, n.d.).
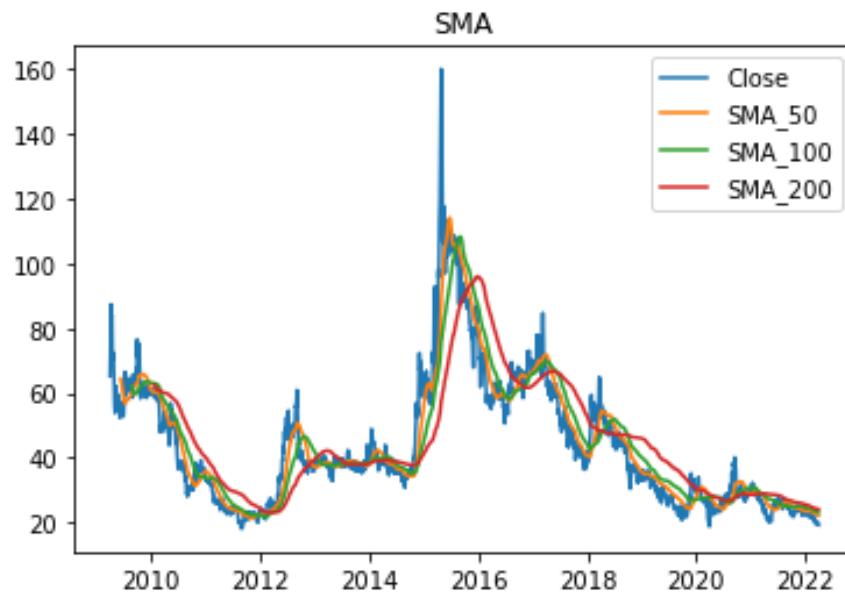
ANALYSIS

TECHNICAL ANALYSIS

Figure 2: SMA graph

Simple Moving Average is the unweighted moving average of the Close prices of the stock over a number of days. Fig. 2 shows the graphs of Simple Moving Average(SMA) of the closing prices of BPL stock. They include simple moving averages of 50 days, 100 days and 200 days respectively. Looking at the graph, the shorter SMA values are usually lower than the longer SMA values which is not a good sign.
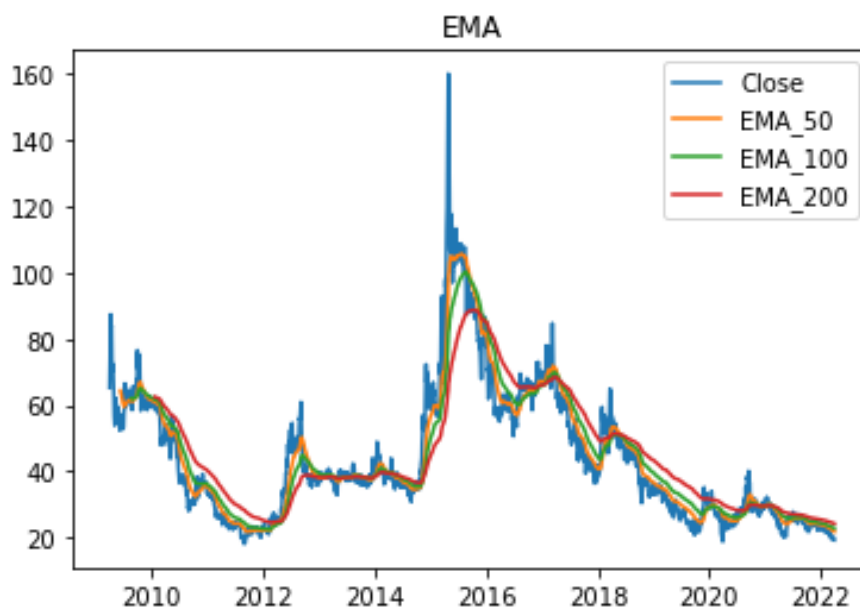

Figure 3: EMA graph

Exponential Moving Average is the weighted moving average of the stock price over a time period, this applies weighting factors to the previous prices so that it never reaches zero. Fig. 3 above shows the graphs of Exponential Moving Average(EMA) of the closing prices of BPL stock. This includes EMA of 50 days, 100 days and 200 days. Similar trend can be seen for EMA ie the shorter EMA values have lower values than the longer EMA values.
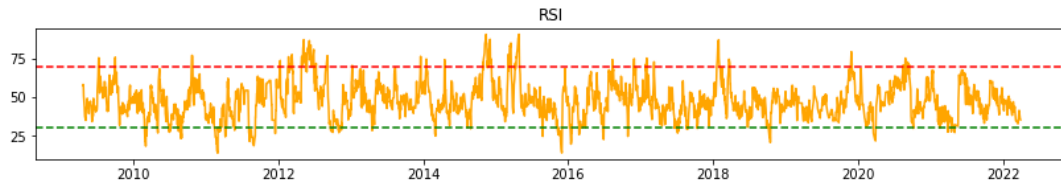

Figure 4: RSI graph

RSI is the relative strength index of a stock which measures the current and historical strength or weakness of the stock based on the closing prices of the stock. Stocks with stronger positive changes has a higher RSI than the stocks with more negative changes recently. High levels of RSI are marked at 70 and lower levels are marked at 30. The BPL stock has a very low RSI lately as it can be observed in Fig. 4. The RSI is closer to 30 which means that the stock is weak based on the recent negative changes in closing prices of the BPL stock.

```
Start                    2015-03-31 00:00:00
End                      2022-03-31 00:00:00
Duration                 2557 days 00:00:00
Exposure Time [%]                  67.028494
Equity Final [$]                  2216.92612
Equity Peak [$]                      10000.0
Return [%]                        -77.830739
Buy & Hold Return [%]             -72.363323
Return (Ann.) [%]                 -22.705707
Volatility (Ann.) [%]              31.911716
Sharpe Ratio                             0.0
Sortino Ratio                            0.0
Calmar Ratio                             0.0
Max. Drawdown [%]                 -78.497439
Avg. Drawdown [%]                 -78.497439
Max. Drawdown Duration   1848 days 00:00:00
Avg. Drawdown Duration   1848 days 00:00:00
# Trades                                   2
Win Rate [%]                             0.0
Best Trade [%]                    -25.615315
Worst Trade [%]                   -70.577928
Avg. Trade [%]                    -53.218042
Max. Trade Duration      1470 days 00:00:00
Avg. Trade Duration       924 days 00:00:00
Profit Factor                            0.0
Expectancy [%]                    -48.096621
SQN                               -2.898214
_strategy                         MyStrategy
```

Figure 5: Stats for Technical Analysis

Fig. 5 above shows the metrics of BPL stock when the trades were set at the condition of stocks to be bought at rsi>70 and sma1>sma2 and the stocks to be sold at rsi<30 and sma1<sma2. In

this case only 2 historic trades were detected when these conditions were met. However, the Sharpe ratio remained zero. The Sharpe ratio remains zero even after the stop loss changes were made, this means that the stock is not strong enough to be effected by stop loss.
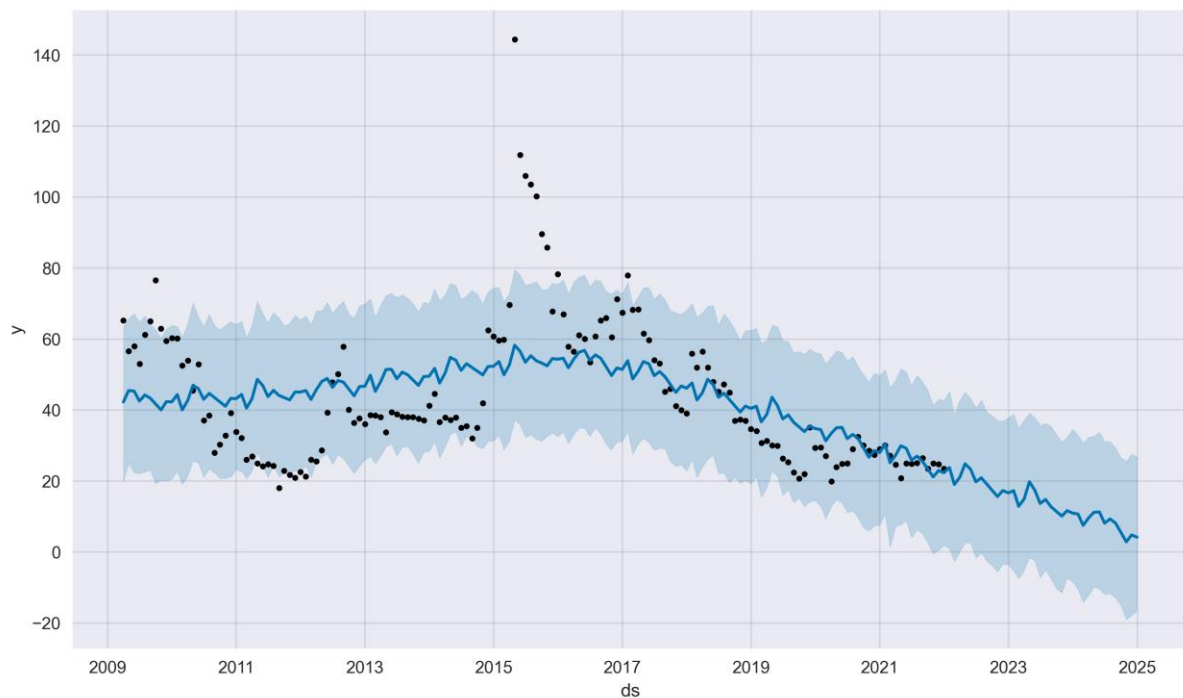
STOCK FORECASTING

Figure 6: Stock price forecast

The graph above (Fig. 6) shows the forecasted stock prices for the BPL stock over the next 3 years. As it can be seen in the graph, there would be a downward trend in stock prices ie it would decrease from around 20 rupees currently to 3 rupees by 2025. This is definitely an alarming situation for the stock as it will proceed to lose its value continuously for the next 3 years.

CASHFLOW FORECASTING

Cashflow forecasting was done manually on excel after forecasting income statement and balance sheet 3 years in advance. The graphs below (Fig. 7) show the the historical and forecasted components of income statement and balance sheet. The blue line shows how the individual components will forecast into the future.
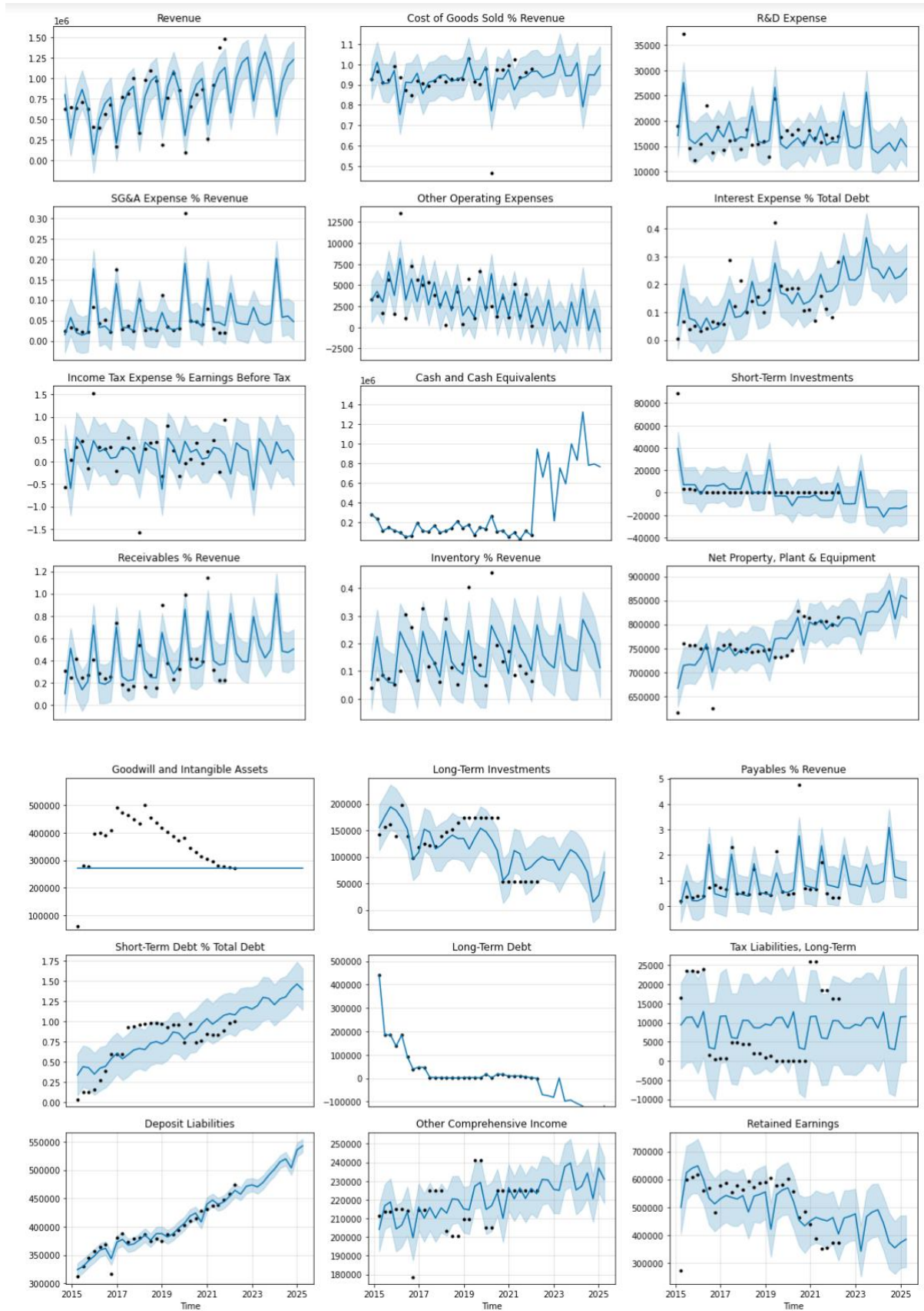
Figure 7: Individual BS and IS component forecasts

The important trends that can be observed here are the constant decrease in retained earnings and there is also a decrease in long term debt, it would be nearly zero. The revenue for the company would keep fluctuating as before however, there would be a gradual increase and the expenses would remain almost the same which is a good sign for the company. The interest expense as a percentage of total debt is also forecasted to increase with time.
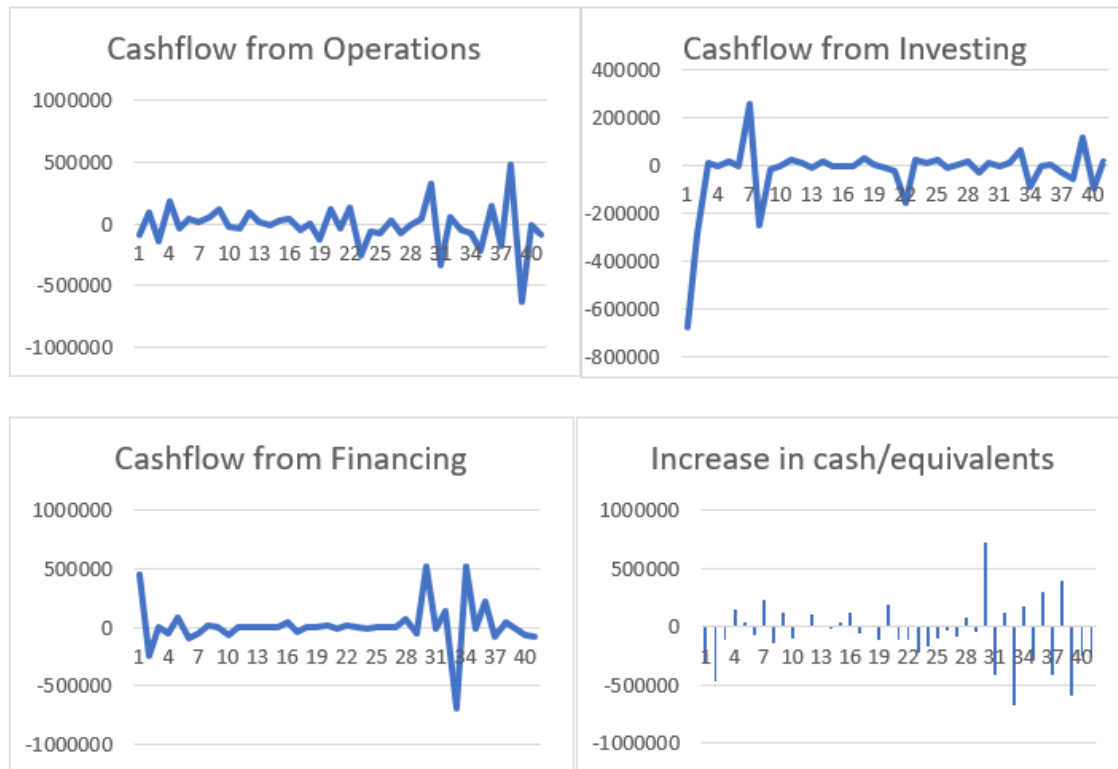

Figure 8: Cashflow forecast

The graphs above (Fig. 8) display historical and future cashflows of Burshane Private Limited. According to these graphs, the next 3 years will result in decrease in cash and cash equivalents. This would a result of the periods of negative cashflows from operations, investing and financing in the future. This is a warning sign for the company as negative cashflows for a long time may be harmful for the company and could mean that the organization is losing money due to poor conditions or decisions.

PIOTROSKI F-SCORE

The Piotroski F-Score is a financial measure developed by Piotroski, that is used to evaluate the strength of a company's financial position. It evaluates nine financial strength indicators which includes net income, operating cashflow, return on assets, quality of earnings, change in asset turnover, change in leverage, change in company's operating margin, change in dividends and changes in shares outstanding.

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BPL's latest F-score is calculated to be 5 and the previous F-score was calculated to be 6. Discussing the latest F-score, it means that BPL's financial position is 5/9 according to Piotroski. Only 5 of the indicators requirements are met for the organization. This score shows some financial distress for the company hence the BPL stock is not likely to outperform the market. The company has been in a financial distress for the past few years as it can be seen in the following array of latest F-scores [5, 6, 6, 4, 3, 3, 5, 4, 3].

GRAHAM VALUE

The Graham value is a formula used to estimate the intrinsic value of a company based on its financial information. Graham value is used as a guide to determine whether a company is overvalued or undervalued. This is determined by comparing Graham value with the current stock price. If the company's current market price is lower than its Graham value, it may be considered undervalued and a good investment opportunity. If the market price is higher than the Graham value, the company may be considered overvalued and less attractive as an investment.

BPL's Graham value is calculated to be 4.34243 which is lower than it's current stock price which is Rs 17.5. This means that the company is overvalued and is not an attractive investment for the investors at this moment.

COST OF CAPITAL

The weighted average cost of capital (WACC) is a measure of a company's overall cost of capital, taking into account the relative importance of each component of the company's capital structure. It is calculated by weighting the cost of each component (such as equity, debt, and preferred stock) by its relative proportion of the company's capital structure.

The graph below (Fig. 9) shows the KSE 100 index (market beta's) price through the years. The stock market has generally been down in the latest years.

Figure 9: Market's Beta trend

The graph below (Fig. 10) shows the trend in WACC from the time period of 2015 to 2019. It can be noticed that the WACC was the lowest in 2018 at 3.9%. The latest WACC value calculated in 2019 was 4.1%. The trend of WACC rates has been unpredictable over the years according to the graph below.
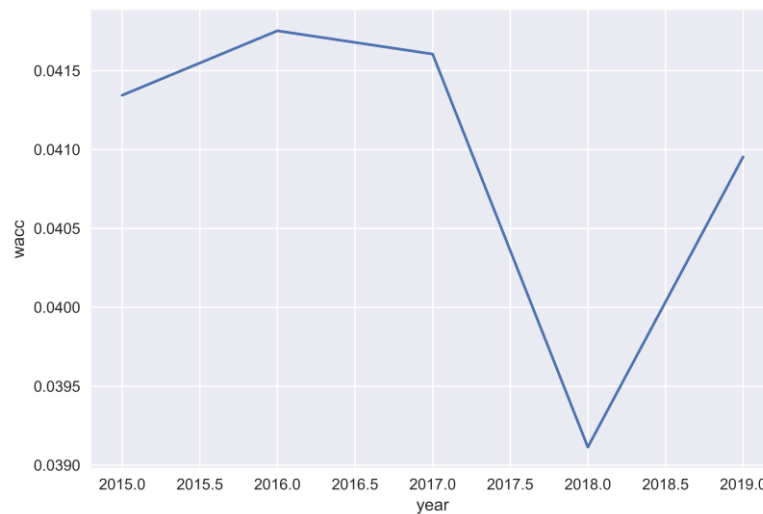

Figure 10: WACC trend (2015-2019)

However, by using Monte Carlo simulation technique, it was possible to create a possible distribution of BPL's WACC in the future.

Through the fitter function, it was first identified that the best fitting distribution for the values of WACC is the exponpow distribution. After that 10000 iterations were used to create random values of WACC most suitable to BPL and they were plotted in a histogram graph that can be seen below in Fig. 11.
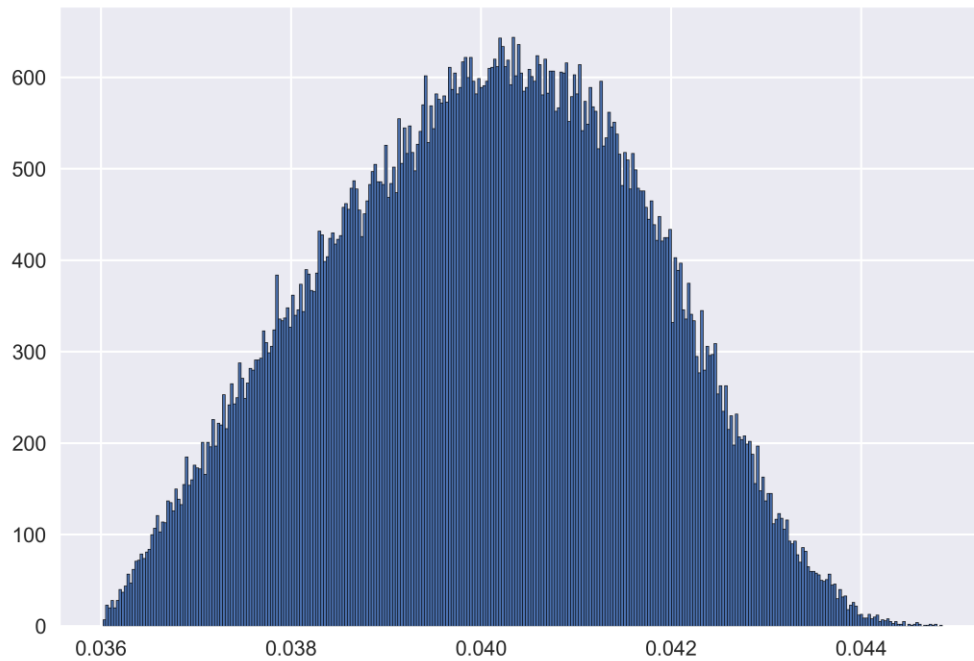
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Figure 11:WACC distribution (exponpow)

The main statistical description of the future WACC can be found in the following figure (Fig. 12). The mean WACC for BPL is predicted to be 4% with standard deviations of 0.16%.


```
count   100000.000000
mean          0.040032
std           0.001639
min           0.036020
25%           0.038826
50%           0.040087
75%           0.041261
max           0.044852
```

Figure 12: WACC descriptive statistics

PROBABILITY OF DEFAULT

Probability of default (PD) is a measure of the likelihood that a company will default on its debt threshold. It provides an outlook to the investors and makes it easier for them to decide. BPL's probability to default is calculated to be 0.084348. Hence it is predicted that BPL's probability to default is 8.43% in 1.38 days. It is highly unlikely that the company will default in a day and half and hence this measure is recommended to not be considered very seriously.

VaR and CVaR

Value at Risk (VaR) and Conditional Value at Risk (CVaR) are two measures that are used to assess the risk of financial investments.

VaR is a statistical measure that estimates the maximum potential loss that an investment could incur over a given time period, with a certain level of confidence. CVaR, also known as expected shortfall, is a measure of the average loss that an investment is expected to incur beyond the VaR level. CVaR could also be named as a more conservative approach when it comes to risk exposure as compared to VaR.

At an investment of Rs. 100000, it was calculated that BPL's value at risk is -5427.63 at a 99% confidence interval. This means that there is only 1 % chance that the an investment of Rs. 100000 will incur a loss of more than Rs. 5428.

Similarly, at the investment of Rs. 100000 BPL's CVaR was calculated to be -9717.67 at a 99% confidence level. This means that there is only 1% chance that, at the worst case scenario, an investor will incur a loss of more than Rs. 9718 at an investment of Rs. 100000.

The graph below (Fig. 13) maps Var(blue) and CVaR(red) on a histogram of returns which almost resembles a normal distribution of returns.
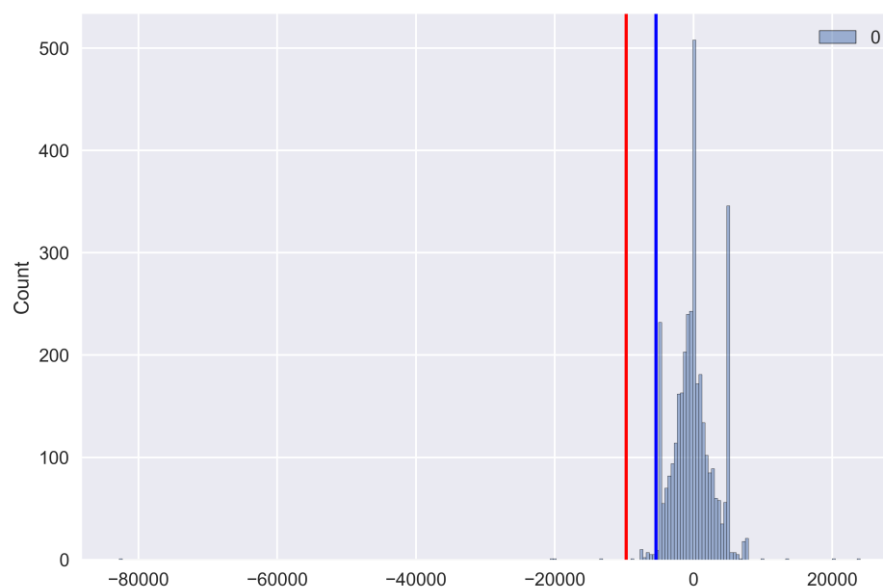

Figure 13: PNL graph with VaR(blue) and cVaR(red)

STOCK RECOMMENDATION

I believe that the BPL stock is not a good investment at this point in time. This is because of the poor performance of the stock in the past few years and quarters. The following reasons make the stock undesirable for investment:

- The technical analysis of the stock concluded that the shorter SMA and EMA values were lower than the longer SMA and EMA values. The RSI values have also been near 30 lately. All these metrics advocate for the poor performance of the stock lately.
- Stock and cashflow forecasting section in analysis forecasted stock prices to fall gradually to zero in the next years and cashflows to be consistently negative in the next quarters. This is a negative sign as it forecasts losses for the company in the future.
- BPL stock's VaR and cVaR values can also be considered to be high by the investors which means that their investment could incur high losses.
- The calculated Pitroski's F-score has also been low for the company which signifies weak financial position of the company. Same for Graham value for the organization which deduced that the stock is significantly overvalued.

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