FUNDAMENTAL AND TECHNICAL ANALYSIS

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INTRODUCTION

Smart investing may allow your money to outpace inflation and increase in value.Before investing in any stock you should do it analysis fundamental and technical .so today I will do analysis of TATA POWER CO. .Tata Power Company Limited is an Indian electric utility company based in Mumbai, Maharashtra, India and is part of the Tata Group. The core business of the company is to generate, transmit and distribute electricity..With an installed electricity generation capacity of 10,577 MW, it is India's largest integrated power company.

So first I will do fundamental analysis using certain indicators

1.**Debt to Equity(D/E) ratio.**

2.Dividend Yield

Debt to Equity(D/E) ratio.

The debt to Equity Ratio (D/E) is a financial ratio that investors use to analyze the debt load of a company. As a general rule of thumb, the DE ratio above 1.5 is not considered good.

But How can we determine that company's d/e ratio is good or not for investment?

Generally if D/E ratio of company increases than weight average cost capital(WACC) decreases. Less WACC more benefit for the company.But a trained eye also knows that an increasing debt to equity ratio is not good. It must be controlled. Why? Because it lowers the company's ROCE. Ideally, a company's ROCE shall not fall below WACC.Generally, a company knows its sweet spot (DE ratio). If it will cross that DE ratio, its ROCE will fall below the WACC. Hence, good companies try to keep control of their DE ratio. Indirectly, they are balancing ROCE and WACC.

From recent data of tata powers Ltd

1. **WACC value= 5.58%.**
2. **ROCE value = 6%**
3. **(D/E) ratio = 3.87**

Here (D/E) ratio is crossing 1.5 mark but at the same time WACC is lower than ROCE
So company can afford increasing (D/E) ratio.It is good for company but at the same time A high **debt-equity (DE) ratio** is also not good if the company wants to borrow more. the company has a high debt-to-equity ratio, any losses incurred will be compounded, and the company will find it difficult to pay back its debt.

Looking at the following parameters can help to decide on an optimum DE ratio:
1.**ICR Ratio=**For a company to report a decent PAT, a safe ICR will be at least three (3).
=EBIT/interest
ICR=1.13

The lower the interest coverage ratio, the higher the company's debt burden and the greater the possibility of bankruptcy or default
Let's look at utility industry(tata power belongs to this) for better insights.
Sometimes if company's debt-equity (DE) ratio >3 then we have to also see,what

it's competitor is doing.
UTILITY industry(D/E) ratio is<1 so.
Conclusion 1. With this indicator ,it is risky to invest in TATA POWER.

DIVIDEND YIELD

Divided pers share of tata power It's previous record

	DIVIDEND PER SHARE	EPS
March 2022-	1.75	8.61
March 2021-	1.55	2.41
March 2020-	1.55	-0.08
March 2019-	1.30	5.90
March 2018-	1.30	-12.05

So in recent few years dividend per share is roughly increased.so it show it is a good dividend paying stock.

→ **if EPS growth and dividend per share growth are similar of last 5 year then EPS growth similar to dividend growth means, as company profit will increase in future, its dividend payout will also improve.**

Here dividend per share increases when company's EPS increase even though when company EPS is decreasing but dividend per share is increasing .so it is showing it is good stock.

If dividend-paying stocks are so good, why everyone does not only buy them?

Reason : Dividend yield is not a sufficient indicator to identify good dividend paying stocks. Stocks paying high dividend one year, and nothing the following year, is also not good. It may happen that a stock which is yielding 8% dividend today, may yield only 0.5% in next FY.

CONCLUSION:

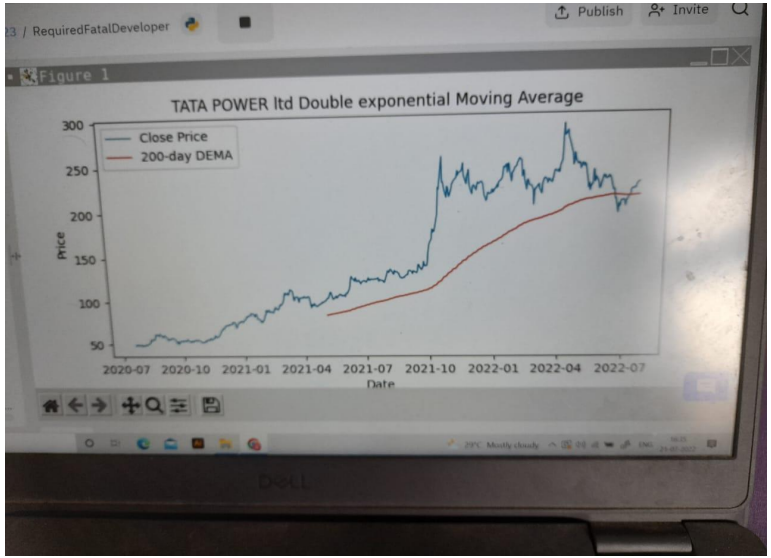
Since by dividend yield indicator is showing that the Tata power ltd is a good dividend paying stock which is a good thing but it is not only reason so that you can invest reason explained above and i feel debt to equity ratio is also not good though company is making good profit but if company faces loses due to bad decision or other reason then it is very difficult for a company to recover then there will be high chance that your money will go in vain.

Source https://site.financialmodelingprep.com/financial-ratios/TATAPOWER.NS
https://www.moneycontrol.com/financials/tatapowercompany/ratiosVI/TPC

TECHNICAL ANALYSIS

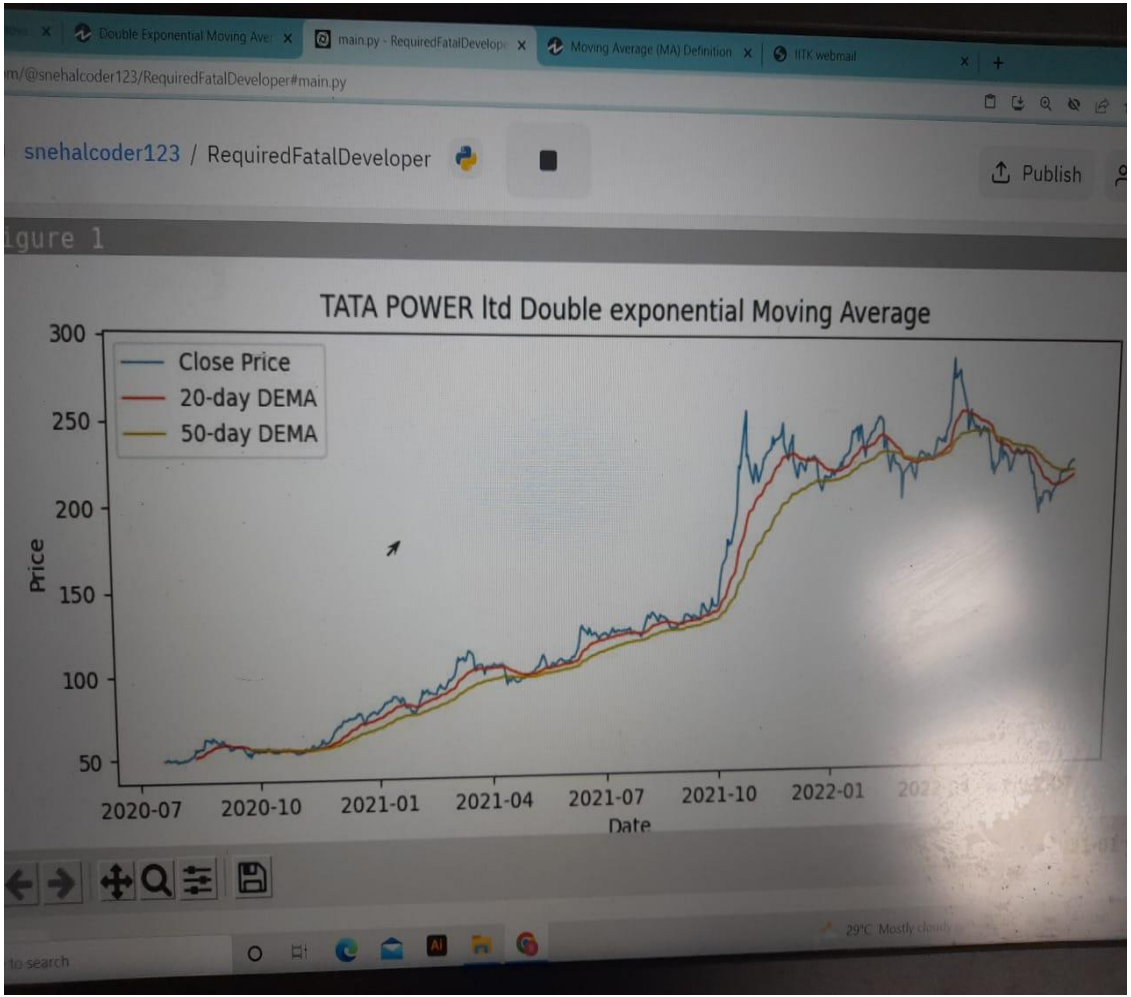
1. Double exponential moving average - . When the price of an asset is above the DEMA, and the DEMA is rising, it helps confirm an uptrend in price. When the price is below the DEMA, and the DEMA is falling, that helps confirm a downtrend.

some traders display two or more DEMAs with different look-back periods on a single chart. For example, a trader may buy if a 20-period DEMA crosses above a 50-period DEMA, or sell when
. the 20-period crosses back below the 50-period.



200 day DEMA

In july last, dema is below stock price and it is increasing so indicate uptrend price.so it show uptrend in price.



Again in july last,50 day DEMA is below 20 day DEMA so trader can buy stock and can sell in future when e 20-period crosses back below the 50-period.

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```python
import pandas as pd
import yfinance as yf
import matplotlib.pyplot as plt
def EWMA(data, ndays):
    EMA = pd.Series(data['Close'].ewm(span = ndays, min_periods = ndays - 1).mean(),
                    name = 'EWMA_' + str(ndays))
    data = data.join(EMA)
    return data
def DEWA(data1,ndays):
    data2=2*data1-EWMA
    return data2
data = yf.download('TATAPOWER.NS', start="2020-07-20", end="2022-07-20")
close = data['Close']
ew = 20
EWMA = EWMA(data,ew)
EWMA = EWMA.dropna()
EWMA = EWMA['EWMA_20']
DEWA = DEWA(EWMA,ew)
DEWA = DEWA.dropna()

plt.figure(figsize=(10,7))

# Set the title and axis labels
plt.title('TATA POWER ltd Double exponential Moving Average')
plt.xlabel('Date')
plt.ylabel('Price')
```

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main.py ×

```python
# Plot close price and moving averages
plt.plot(data['Close'],lw=1, label='Close Price')

plt.plot(DEWA,'r', lw=1, label='20-day DEMA')

# Add a legend to the axis
plt.legend()

plt.show()
```

Python code written on replit

2. TRI STAR pattern- A tri-star is a three line candlestick pattern that can signal a possible reversal in the current trend, be it bullish or bearish.Tri-star patterns form when three consecutive doji candlesticks appear at the end of a prolonged trend.

Candlestick plot of last 2 years TATAPOWER ltd

Link for code

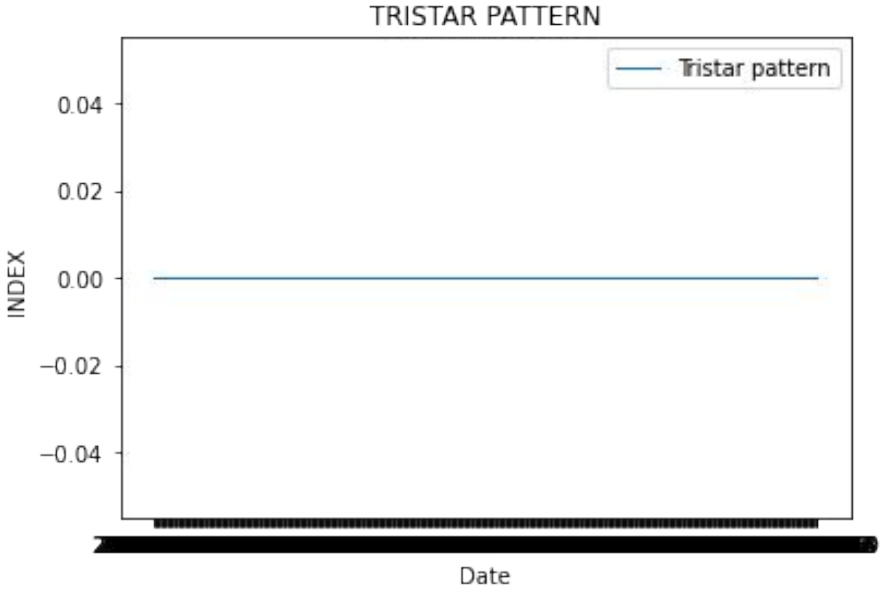
https://colab.research.google.com/drive/1taa0S98Y5AQRVzZ2Haz1GysY8j8ssu1o?usp=sharing

```
!curl -L http://prdownloads.sourceforge.net/ta-lib/ta-lib-0.4.0-src.tar.gz -O && tar xzvf ta-lib-0.4.0-src.tar.gz
!cd ta-lib && ./configure --prefix=/usr && make && make install && cd - && pip install ta-lib

import matplotlib.pyplot as plt
import talib
!pip install yfinance
import finance as yf
import pandas as pd
from datetime import datetime
import plotly.graph_objects as go
df = pd.read_csv('TATAPOWER.NS (3).csv')
fig = go.Figure(data=[go.Candlestick(x=df['Date'],
                open=df['Open'],
                high=df['High'],
                low=df['Low'],
                close=df['Close'])])

fig.show()
```

Csv file imported from yahoo finance from 2020-07-20 to 2022-07-20



Tristar pattern vs date for two years of TATA POWER ltd

-100 denotes a bearish Tristar pattern . Conversely +100 denotes a bullish Tristar pattern and 0 for no pattern

Code for tri star detection

https://colab.research.google.com/drive/1taa0S98Y5AQRVzZ2Haz1GysY8j8ssu1o?usp=sharing

```
import matplotlib.pyplot as plt
import talib
!pip install yfinance
import finance as yf
import pandas as pd
from datetime import datetime
import plotly.graph_objects as go
df = pd.read_csv('TATAPOWER.NS (3).csv')
result = talib.CDLTRISTAR(df['Open'],df['High'] ,df['Low'],df['Close'])
plt.title('TRISTAR PATTERN')
plt.xlabel('Date')
plt.ylabel('TRISTAR PATTERN')
plt.plot(df['Date'],result,lw=1, label='INDEX')
plt.legend()

plt.show()
print(result)
```

Conclusion - no tristar pattern appears in 2 years so it indicates it is a rarer pattern.

THANKS

confession:

before this task i do not know about analysis ,whatever this report is right or wrong i do not know but this task help me to learn many new things. thanks