

Foreseeing the Stock Movement Using Exponential Moving Average in NSE

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Abstract - The target of the review is to find the legitimacy of the Exponential Moving Average (EMA) for transient speculations. Here we gathered the end costs information of Procter and Gamble LTD, Dabur India LTD, Colgate and Bajaj Consumers from National Stock Exchange (NSE) for the time of fifteenth September 2020 to 14 September 2021. Here we distinguished that the Exponential Moving Average (EMA) specialized instrument will ready to produce the dependable and legitimate outcomes which can assists with picking right value stock for momentary ventures. The review presumes that outstanding Moving Average (EMA) will skilful to produce the substantial outcomes however financial backer ought not just depends Exponential Moving Average (EMA) and furthermore checks with other specialized pointers.

Keywords: Foreseeing, NSE, Stock Movement, Moving Average.

I. INTRODUCTION

Presently a day, the interests in securities exchanges is more dangerous, because of vulnerability in developments of the costs. Thus, defeat the danger of vulnerability in developments and to anticipate the right developments of costs. The financial backer depends on specialized examination which settles on to take right choice while contributing the assets. Presently a day, we have numerous specialized apparatuses among those; outstanding moving normal is one of them. By and large, the basic and least demanding type of moving normal is straightforward moving normal (SMA), is determined by number-crunching mean of given arrangement of qualities. For instance, to work out multi day basic moving normal, we include late 10 days shutting costs of a particular stock and make partition the complete worth with quantities of days (10 days). In the event that the broker wishes to see the multi day moving normal, we include ongoing 20 days shutting costs of the stock and make partition the absolute worth with number of day (20 days). Like that we can work out the multi day moving normal, multi day moving normal and multi day moving normal.

1.1 Exponential Moving Average

The exponential moving average is a type of moving average that gives more weight to recent prices in an attempt to give the more responsive information. That helps investors to choose right investments and to make profitable returns. The following the equations of exponential moving average:

$$\text{EMA} = \text{Price}(t) \times k + \text{EMA}(y) \times (1-k)$$

$$\text{Price}(t) = \text{current price}$$

$$K (\text{smoothing factor}) = 2 / (n+1)$$

$$N = \text{Number of time periods}$$

$$\text{EMA}(y) = \text{previous EMA}$$

Initially while applying the formula to calculate the first point of the EMA, there is no value available to use as the previous EMA. To overcome this small problem can be solved by starting the calculation with a simple moving average and continuing on with the above formula from there.

After applying the exponential moving average, we can able to identify the trend of the stock. So it makes to indicate whether to go for buy or sell the stock.

II. RESEARCH METHODOLOGY

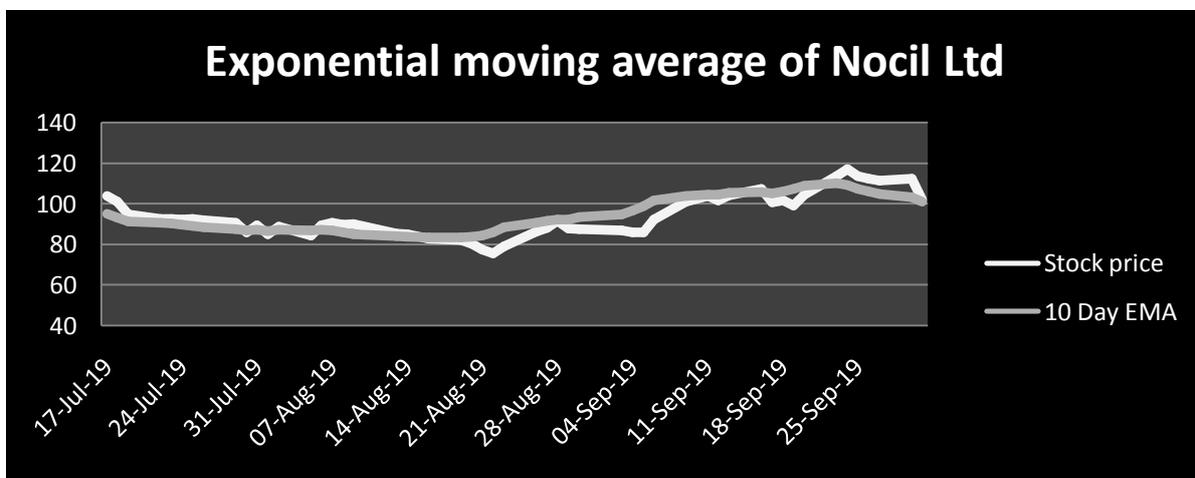
With reference to Procter & Gamble LTD, Dabur India LTD, Colgate and Bajaj Consumers stock prices collected from NSE India from period of 1st April 2019 to 1st October 2019. The above stocks are top performers in terms volume and as wells as market capitalization. So, here we choose the above stocks to analyze the reliability of the exponential moving average.

2.1 Trading Strategies

Strategy 1

When stock price crosses above the exponential moving average (EMA) and stays as long as above the EMA indicates the potential positive change in trend. Which means it's time take the position the stock.

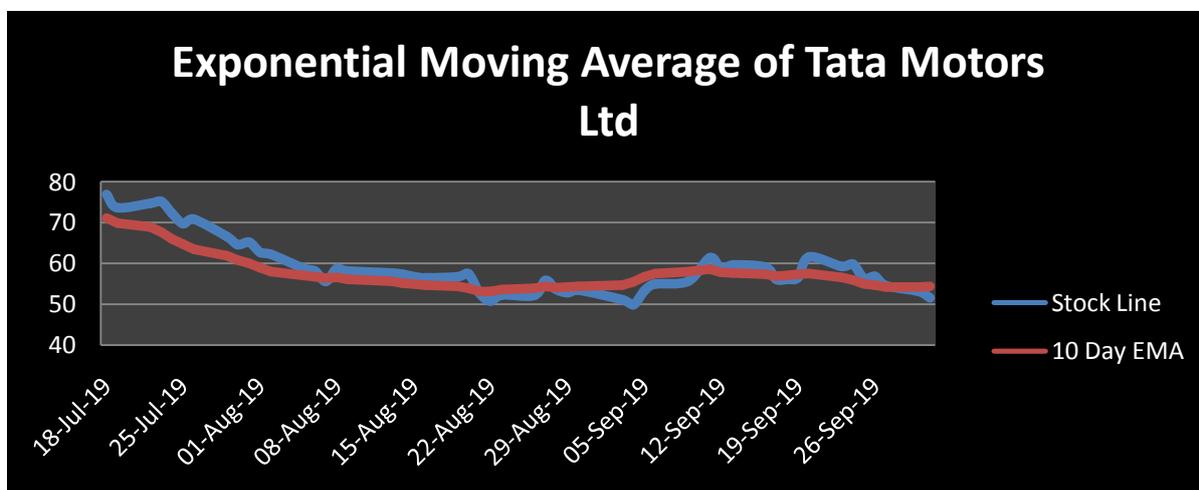
Graph 1
The Comparative Analysis of Stock line and 10 Day EMA of Nocil Ltd



Strategy 2

At the point when stock value crosses underneath the dramatic moving normal (EMA) and stays as years as beneath the EMA demonstrates the possible negative pattern is begun. In this way, it's an ideal opportunity to leave the position or its chance to take the short position.

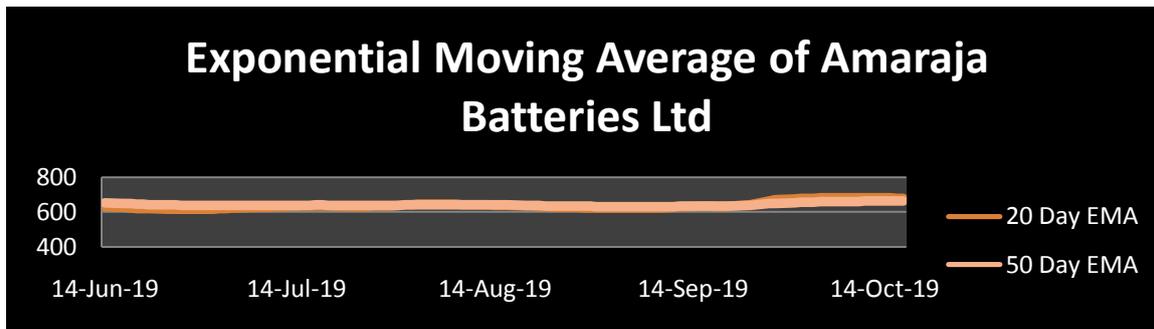
Graph 2
Shows the Comparative Analysis of Stock line and 10 Day EMA of Tata Motors Ltd



Strategy 3

Here we really want to utilize two Exponential moving midpoints in a diagram: One longer EMA and one more limited EMA. When the more limited EMA crosses over the more EMA, it demonstrates the purchase sign and making the upswing. It is otherwise called brilliant cross.

Graph 3
The Comparative Analysis of 20 Day EMA and 50 Day EMA of Amaraja Batteries Ltd



Strategy 4

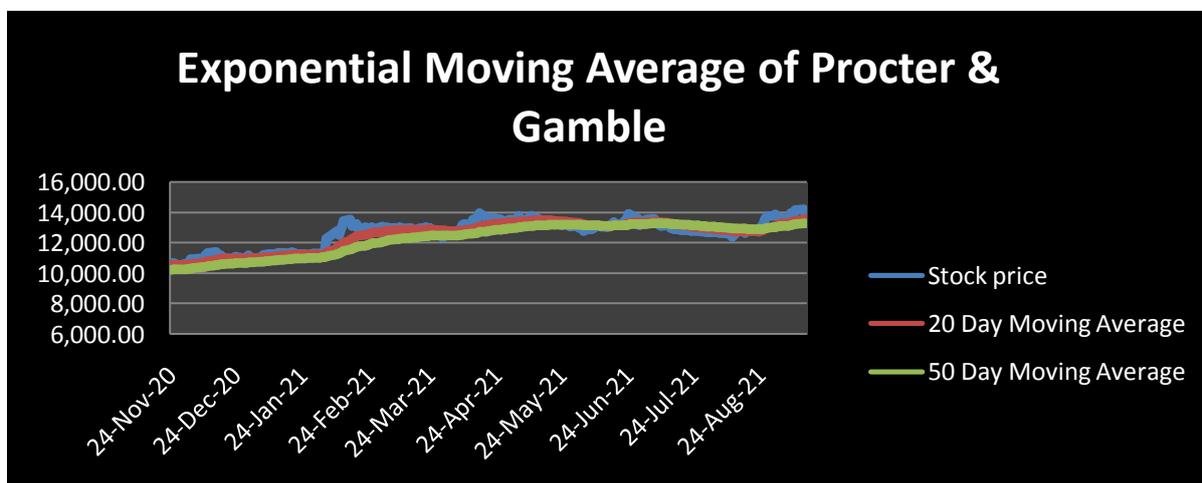
When more limited EMA crosses underneath the more EMA, it's shows the sell sign and makes downtrend. It is otherwise called dead sign.

Graph 4
Comparative Analysis of 20 Day EMA and 50 Day EMA of Heritage Foods Ltd



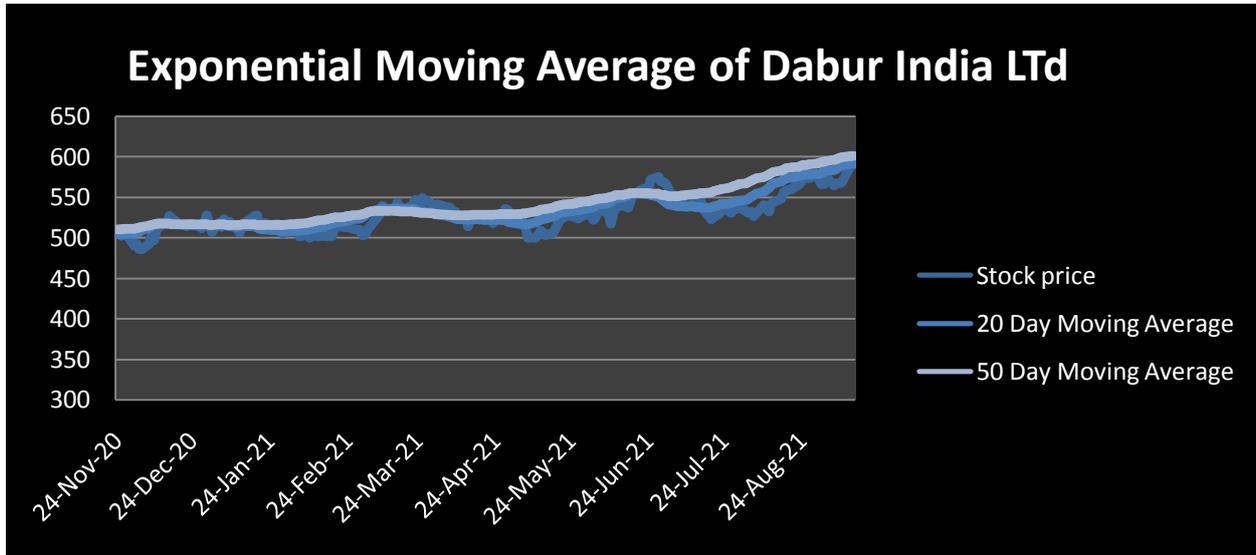
Empirical Results

Graph 5
The Exponential Moving Average of Procter and Gamble LTD



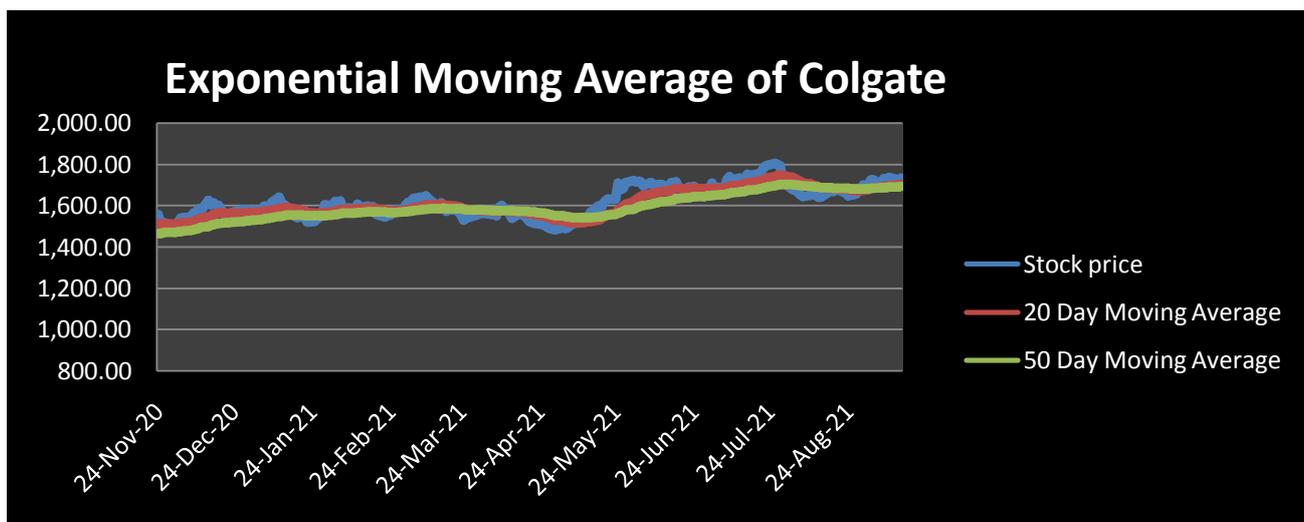
According to methodology of EMA, at whatever point more limited EMA (multi day EMA) crosses and keeps up with over the more EMA (multi day EMA) which takes the stock actions towards up (purchase signal). Like that Procter and bet more limited EMA keep up with the over the more EMA during the time of September 2020 to September 2021. So whole period the stock likewise moves upwards and gives the financial backers to purchase new stock.

Graph 6
The Exponential Moving Average of Dabur India LTD



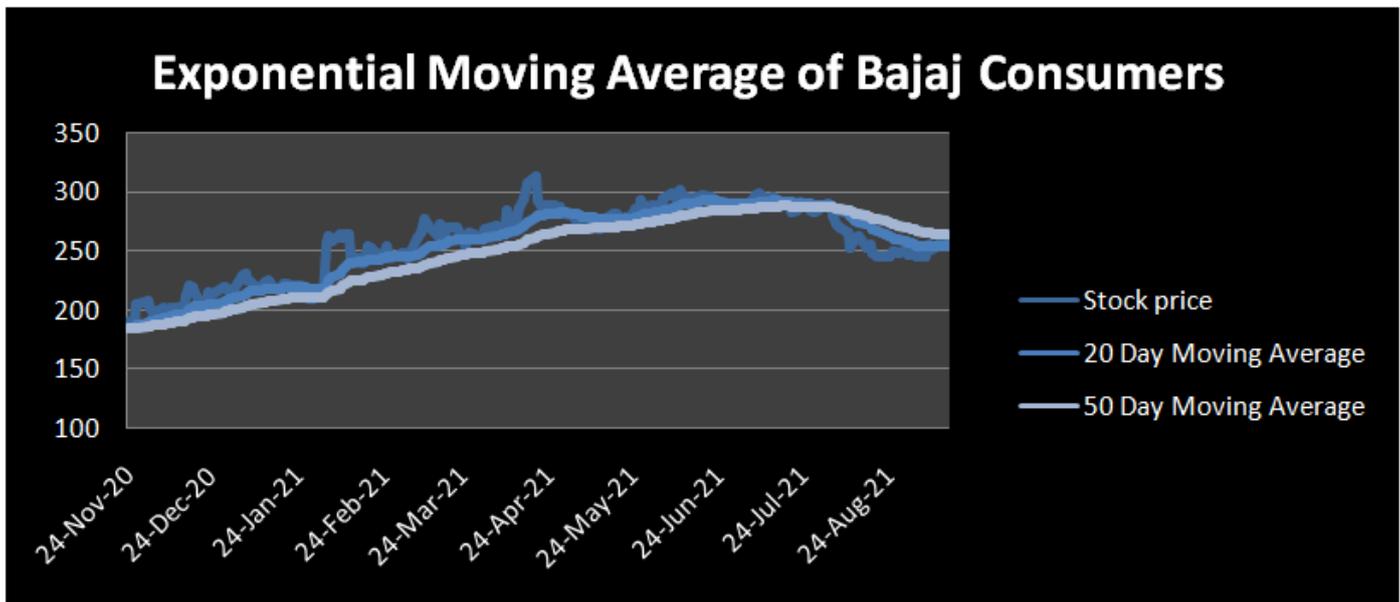
According to methodology of EMA, at whatever point more limited EMA (multi day EMA) crosses and keeps up with beneath the more EMA (multi day EMA) which takes the stock actions towards down (sell signal). Like that Dabur India LTD more limited EMA breaks the underneath the more EMA during the time of April 2021 to work September 2021. So whole period the stock additionally moves downwards and surprisingly after at some point more limited EMA makes to nearer the more EMA however more limited doesn't make over the more EMA. However long more limited EMA is underneath the more EMA, stock isn't great to purchase.

Graph 7
The Exponential Moving Average of Colgate



According to technique of EMA, at whatever point more limited EMA (multi day EMA) crosses and keeps up with over the more EMA (multi day EMA) which takes the stock actions towards up (purchase signal). Like that colgate more limited EMA keep up with the over the more EMA during the time of November 2020 to September 2021. So whole period the stock likewise moves upwards and gives the financial backers to purchase new stock. Still this is the great stock to purchase as of now too.

Graph 8
The Exponential Moving Average of Bajaj Consumers



As per strategy of EMA, when ever shorter EMA (20 day EMA) crosses and maintains above the longer EMA (50 day EMA) which makes the stock moves towards up (buy signal). Like that Bajaj consumers shorter EMA maintain the above the longer EMA during the period of November 2020 to July 2021. So entire period the stock also moves upwards and gives the investors to buy fresh stock. But during the period of July 2021 shorter EMA breaks the below the longer EMA which makes to this moves towards down side (sell signal). At this moment it is recommend selling.

III. FINDINGS

In view of the experimental examination, it is distinguished that the Exponential Moving Average will produce the solid signs. So EMA is one of the trustable specialized apparatus to the financial backers while making new ventures and at an equivalent time, leave the position when EMA demonstrates the sell. From above observational examination, it is recognized that at whatever point the stock line moves over the 20 Day EMA and 50 Day EMA which demonstrates the positive pattern, makes the stock to move upwards and at same time at whatever point stock line falls beneath the 20 Day EMA and 50 Day EMA which shows the negative pattern and makes the stock to move downwards. Another sign is additionally distinguished that if 20 Days EMA (more limited EMA) moves over the 50 Day EMA (longer EMA) makes to create the purchase signal and at same time if 20 Day EMA (more limited EMA) moves beneath the 50 Day EMA (longer EMA) makes to produce the sell signal. Coming up next are the current situation of the above stocks.

Script Name	Signal (as on 15/09/2021)
Procter and gamble	Buy
Dabur	Sell
Colgate	Buy
Bajaj consumers	Buy

IV. CONCLUSION

Typically ventures on value market will be most troublesome choice connected with by financial backer however in light of results acquired; the Exponential Moving Average is recognized as one of most trustable specialized apparatus which assists the financial backers with taking the ideal choice while making momentary interests in the securities exchange. Here in this situation, despite the fact that EMA is dependable, financial backer should go through the other specialized devices and think about, then, at that point, just choose to take choice with respect to the speculations. Continuously examine to the reports of various specialized markers like Exponential Moving Average (EMA), Relative Strength Index (RSI), Candle Stick Charts and so forth Yet, even a few times, specialized calls won't work due different variables impact like worldwide market shortcoming, awful reports on our country economy and so forth Along these lines, while making speculations, the financial backers ought to be more cognizant.

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