

## HISTORICAL INDEX PRICE TO EARNINGS RATIO AND ITS SIGNIFICANCE IN MARKET TIMING

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### ABSTRACT

*The main purpose of this study is to understand index Price to Earnings Ratio and its significance in investing and to evaluate the utility of historical index Price to Earnings Ratio to time the market. In India, some of the asset management companies have also conducted this research however the detail findings are not available in the public domain for the retail investors. This study is based on secondary research, all the trading session since January 1999 i.e. 4653 are taken and analysed using statistical techniques. This research broadly concludes that historically Nifty's one year returns above 22 PE found to be negative and it has shown sudden deep with rising PE after 22. Also Index PE is a one of the major indicator for measuring valuations of major indices as well as broader market.*

**KEYWORDS:** Price to Earnings Ratio, PE, Historical, Market Timing, Undervaluation, Overvaluation.

### Introduction

The PE multiple shows the price investors are willing to pay for a stock for every rupee it earns as profit. Mathematically it is expressed as current market price divided by earnings per share (EPS). For example, if the price of a TCS stock is Rs.2500 and its EPS is Rs.250, then the PE is 10. In other words, for a stock with an EPS of Rs.250 and a PE of 10, investors are willing to pay Rs.2500. Stocks of companies with high growth potential trade at high PE and vice-versa. The predictable earnings also resulted into high PE of stock.

A simple calculation for an overall index P/E is to divide the aggregate earnings of all the stocks in the basket and divide that by the level of the index.

Nifty PE ratio is important as it is a measure of valuation of all the companies included in Nifty. From long term perspective, low Nifty P/E ratio is considered undervaluation and ideal for buying. A high Nifty PE multiple on the other hand is assumed to be overvaluation and warrants caution while taking investment decisions. The same is observed in this study, when Nifty PE ratio is at its peak (in the range of 25 to 30), nifty is also at its peak and vice versa.

### Literature Review

There are several websites where this data is available, however no website provides deep dive analysis of Nifty PE's and its impact on investor's returns in long term. The same research is also conducted by few asset management companies however the precise analysis is unavailable in public domain. For instance, article published in Economic times dated 7 April, 2016, What the PE ratio tells about market

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direction by Ritesh Jain is CIO, Tata Asset Management studied statistical analysis of movement in Sensex PE ratio for the last 16 years and have tried to estimate the likely returns based on regression analysis, concluded that there is a strong correlation between the Trailing PE ratio and the Sensex returns and study of the same provides some useful insights into the stock market returns. Going by the historical data, and our statistical analysis, the Sensex delivers higher return whenever the trailing PE ratio moves below 17, and tends to deliver negative return whenever the same crosses 21. Through this research, the researcher attempts to through light on the significance of index valuation and probable returns for investors as well as investment professionals.

#### Objectives of the Study

- To understand index Price to Earnings Ratio and its significance in investing.
- To analyse historical index Price to Earnings Ratio.
- To evaluate the utility of historical index Price to Earnings Ratio to time the market.
- To evaluate historical index Price to Earnings Ratio in analysing undervaluation and overvaluation of broader market.

#### Sample Size

It is a census study undertaken for the definite conclusive results, number of observations analysed are 4653.

#### Data Collection

The data for this study is collected from the National Stock Exchange's website alone. This study is entirely based on the secondary information. Primary information is deliberately not used in this model to avoid personal views on market movement. All the trading sessions are analysed from 1 January, 1999 to 31 August, 2017 because before January 1999, the data wasn't available in public domain.

#### Research Methodology

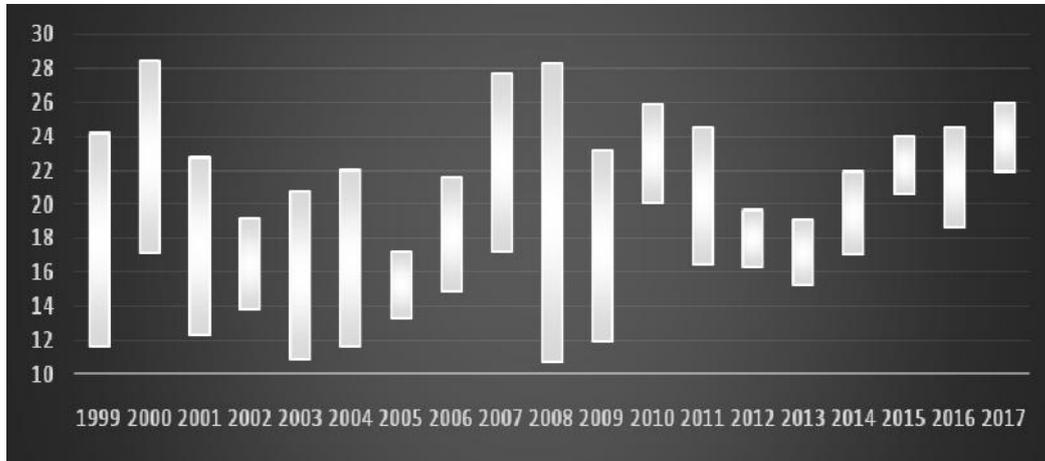
The data is analysed using excel functions like Count if, v look up, sum if, average, min, max, median, and pivot. This data is further analysed using correlation and regression analysis.

#### Trading Session Breakup

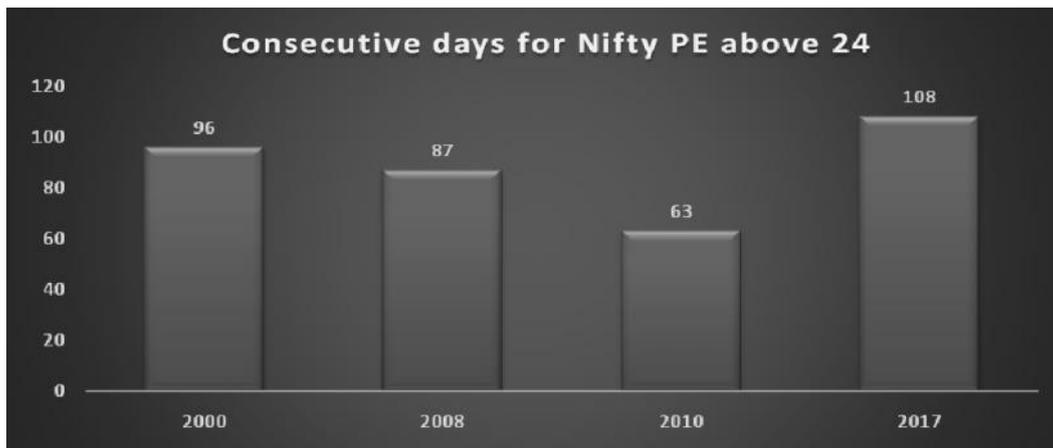


**Analysis**

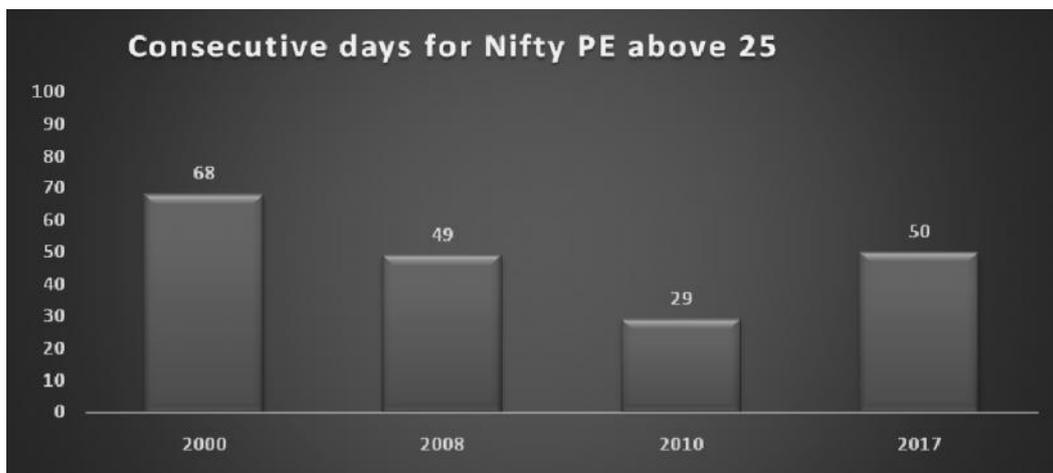
1. Nifty PE range since 1999



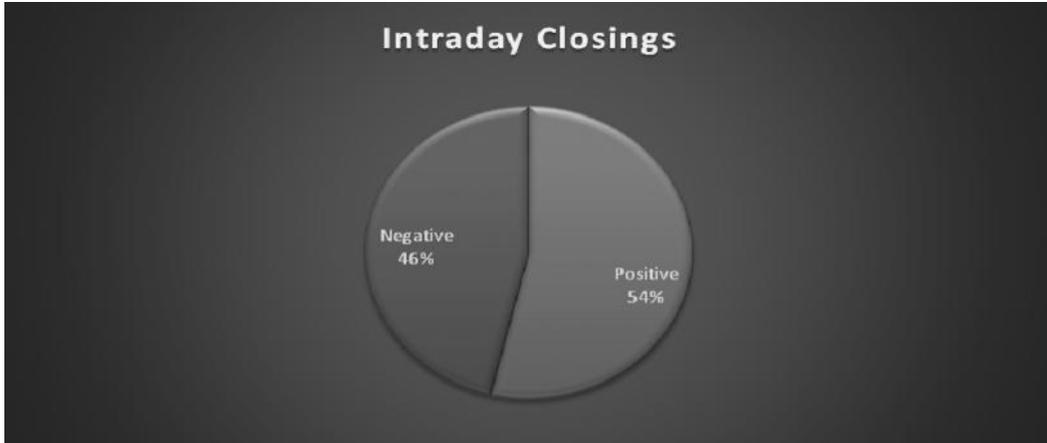
2. Number of days Nifty was traded above 24 since 1999.



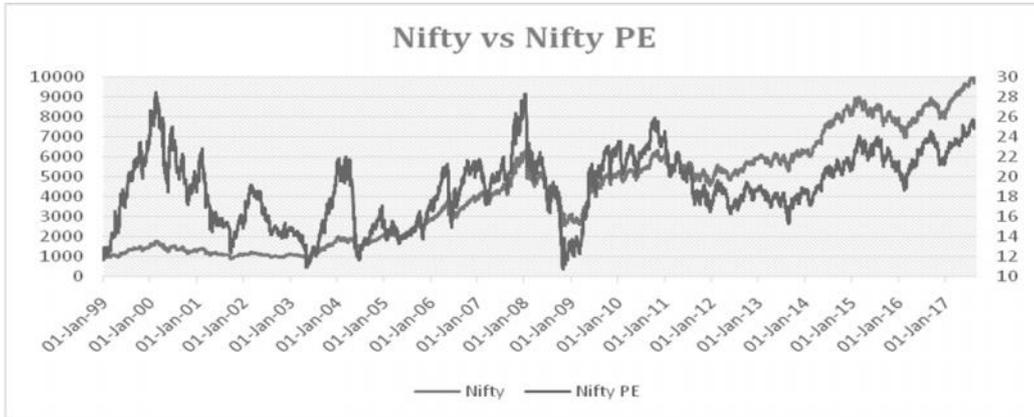
3. Number of days Nifty was traded above 25 since 1999.



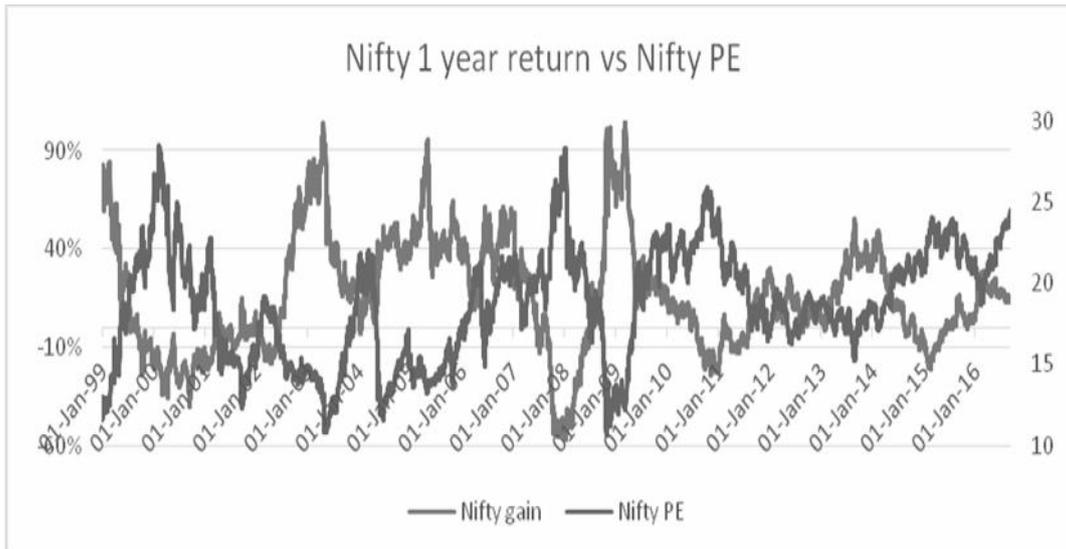
4. Intraday positive and Negative closings since 1999



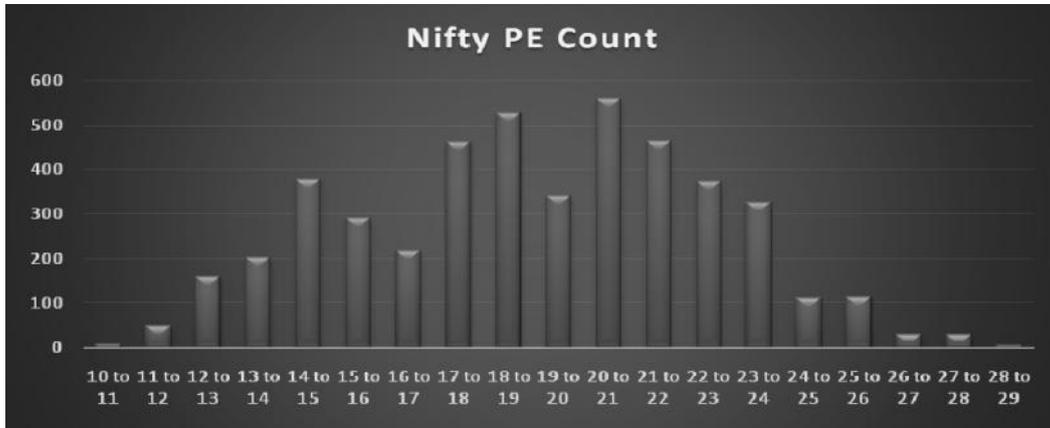
5. Nifty value vs Nifty PE's



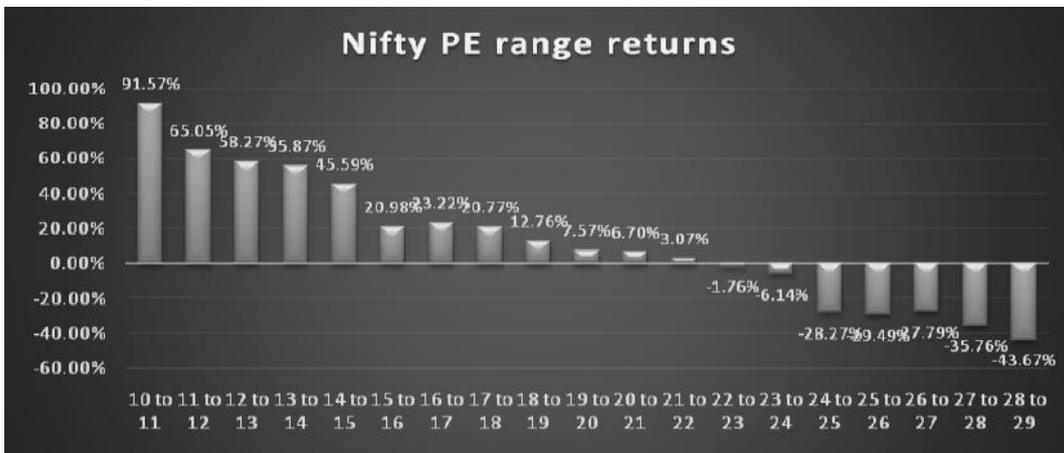
6. Nifty one year return vs Nifty PE.



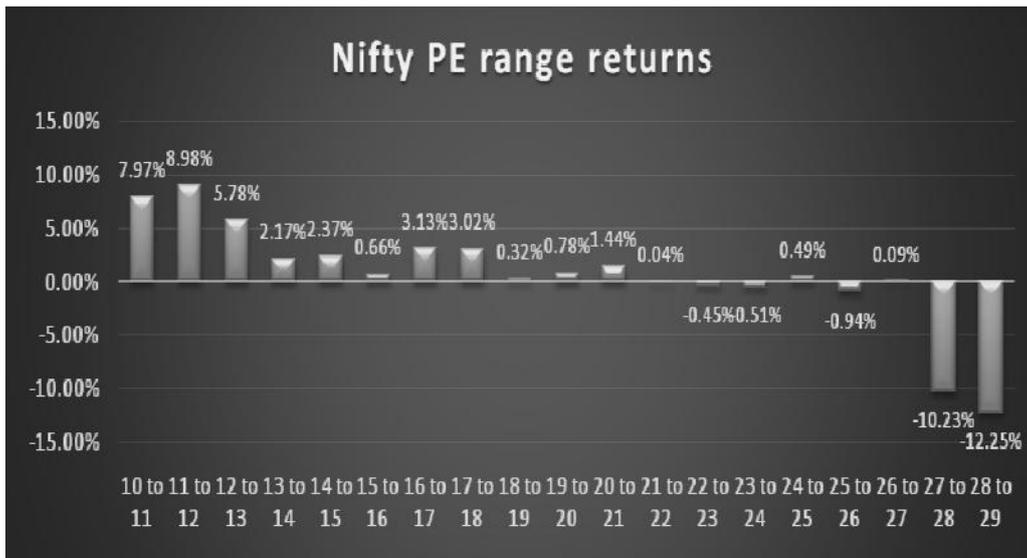
7. Number of observations and Nifty PE range.



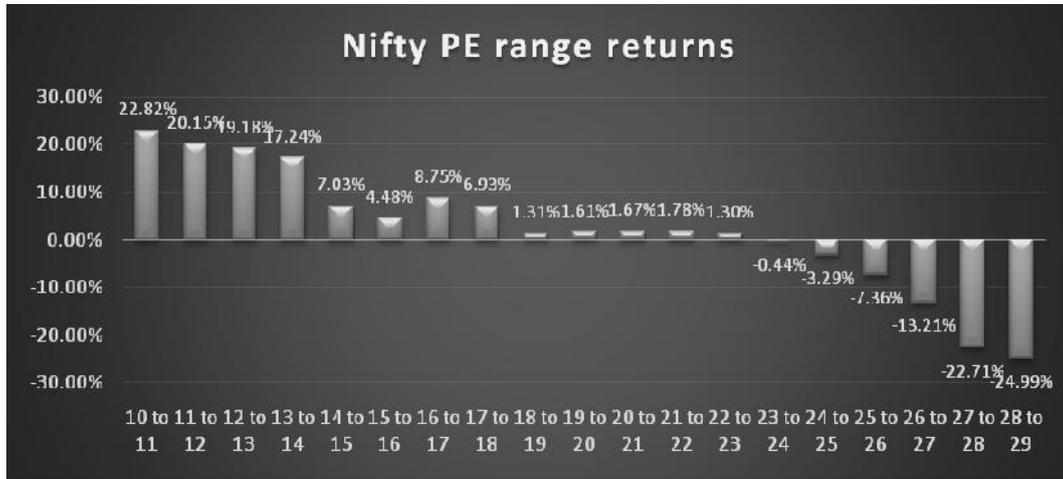
8. Nifty PE range returns one-year data.



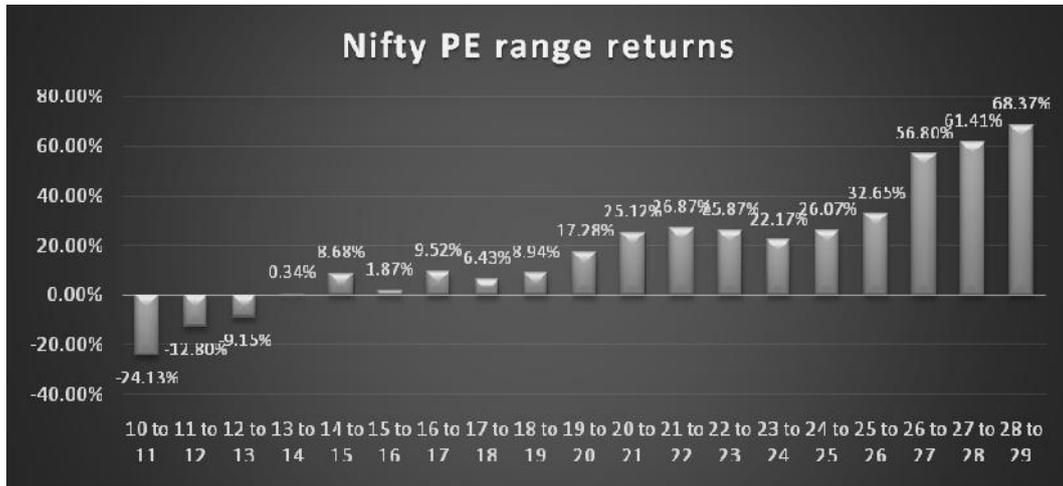
9. Nifty PE range returns one-month data.



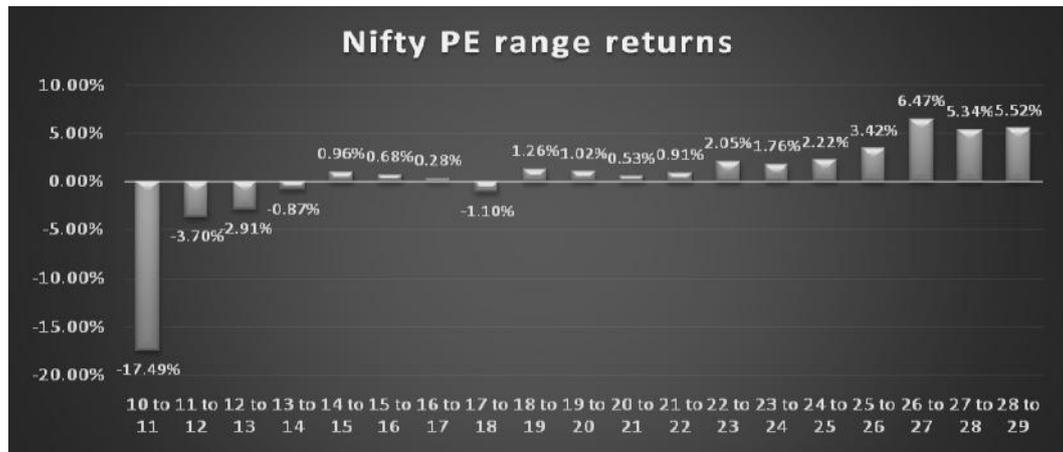
10. Nifty PE range returns three-month data.



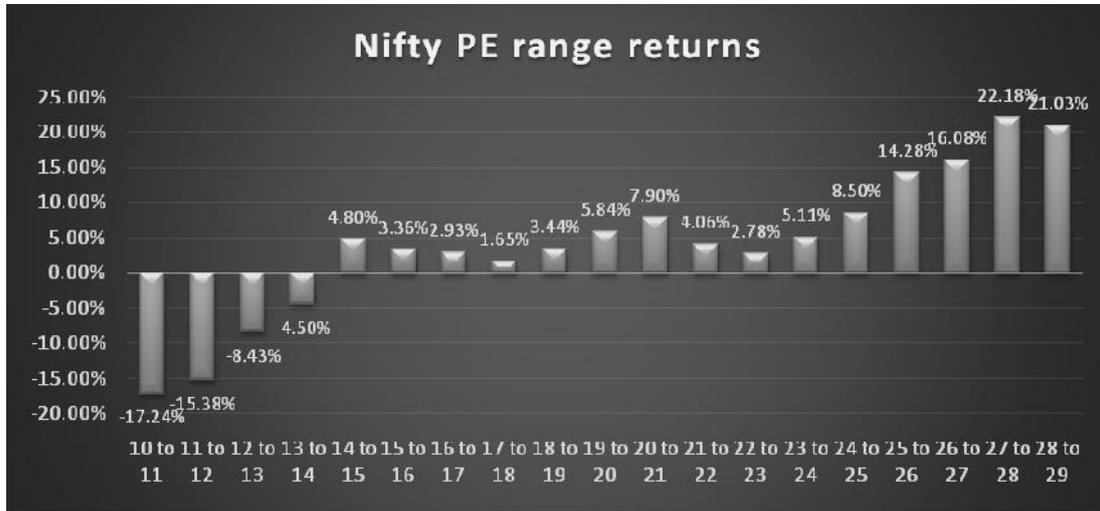
11. Reverse one year Nifty returns and Nifty PE



12. Reverse one month Nifty returns and Nifty PE.



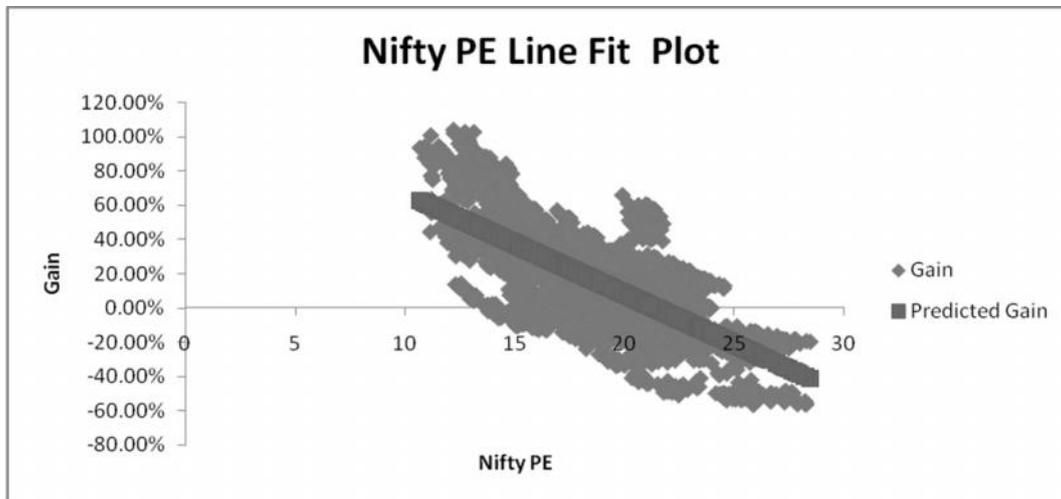
13. Reverse three month Nifty returns and Nifty PE.



Correlation Analysis

Sr. No.	Variable 1	Variable 2	Correlation
1	Nifty 1 year return	Nifty PE	-0.714
2	Nifty 3 month return	Nifty PE	-0.407
3	Nifty 1 month return	Nifty PE	-0.218

Regression Analysis



Findings

- Volatility in index PEs has been reduced since 1999.
- Number of days Nifty traded above 24 PE is highest in 2017.
- Number of days Nifty traded above 25 PE is highest in 2017.
- Intraday positive and negative returns are almost in 50:50 ratios since 1999, hence there is equal risk of gap up and gap down for Index futures/option traders.
- During Jan 1999 to August 2017, Nifty was maximum traded in between 20-21 PE range.

- Historically Nifty's one year returns above 22 PE found to be negative and it has shown sudden deep with rising PE after 22.
- Nifty's one month returns above 25 PE found to be negative and it has shown sudden deep with rising PE after 25.
- Nifty's three month returns above 23 PE found to be negative and it has shown sudden deep with rising PE after 23.
- Reverse one year Nifty returns and Nifty PE witnessed +26% Nifty returns before reaching to 24 PE.
- Reverse one month Nifty returns and Nifty PE witnessed +2.2% Nifty returns before reaching to 24 PE.
- Reverse three month Nifty returns and Nifty PE witnessed +5.1% Nifty returns before reaching to 24 PE.
- Correlation analysis concluded that there is negative correlation between Nifty PE and Nifty returns.
- Regression analysis further concluded same results as depicted by correlation analysis.

#### **Conclusion**

Index PE is a one of the major indicator for measuring valuations of major indices as well as broader market.

#### **References**

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