

re W I S E

Correlation Between P/E & Future Returns

Investors always look for a measure, to gauge the appropriate time for investing. P/E ratio is one of the approaches to provide a comparison of stock price/index price and the stock/ index earnings per share. It is determined by dividing the current share price by the reported attributable earnings over a period of time.

The investment fraternity as well as the investors use ratio's like 'Price Earning Ratio' or P/E ratio as a variable to make investment decisions. This paper explores the relationship between P/E and earnings/ returns.

We have tried to analyze the correlation between the P/E and the future returns. For our analysis we have taken Nifty index returns and Nifty P/E from NSE website. This analysis can tell us what could be the future returns experience if we invest in the equity market at current P/E. The analysis is done from the January 2000 to April 2021 and the returns are as per P/E for 1 year, 3 year and 5 year.

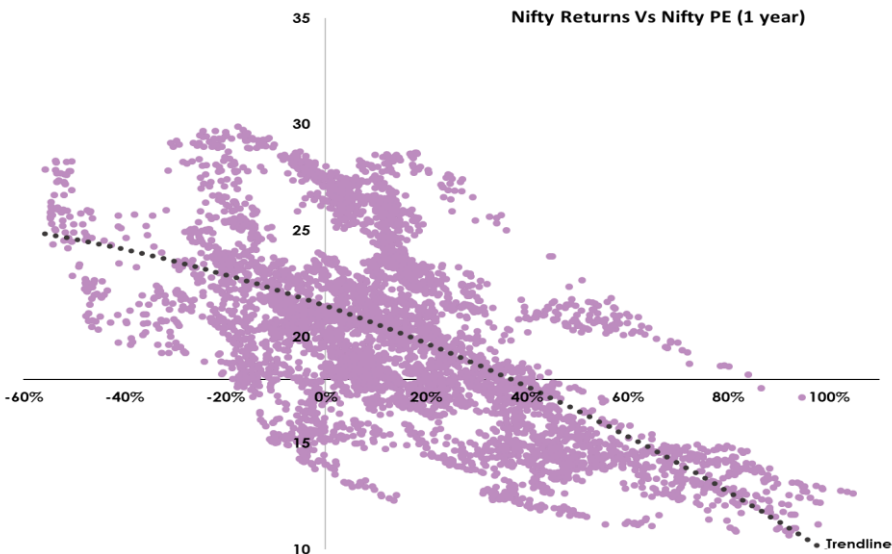
The table below shows what were the nifty index average forward returns. It also shows the maximum and minimum forward returns, within the given P/E band, for the period of 1 year, 3 year and 5 year. The % of returns tell you the number of positive forward returns in that particular P/E band. We can observe from the table that, as the P/E increases the probability of negative returns increases. A similar phenomena is observed with average returns.

Year	PE Range	Returns			% of Returns	
		Average	Max	Min	Positive (+ve)	Negative (-ve)
1 YEAR	10 & 14	59%	105%	-3%	99%	1%
	14 & 18	28%	95%	-17%	83%	17%
	18 & 22	9%	84%	-48%	70%	30%
	22 & 26	-1%	51%	-55%	58%	42%
	26 & 30	-2%	29%	-56%	59%	41%
3 YEAR	10 & 14	32%	58%	3%	100%	0%
	14 & 18	21%	50%	-4%	97%	3%
	18 & 22	9%	35%	-14%	88%	12%
	22 & 26	4%	26%	-16%	81%	19%
	26 & 30	1%	12%	-16%	62%	39%
5 YEAR	10 & 14	24%	43%	10%	100%	0%
	14 & 18	20%	45%	4%	100%	0%
	18 & 22	10%	30%	2%	100%	0%
	22 & 26	6%	17%	-2%	96%	4%
	26 & 30	2%	6%	-1%	62%	38%

Source: NSE, internal research. Nifty 50 as on 30th April 2021. Returns are rolling CAGR for >1 year.

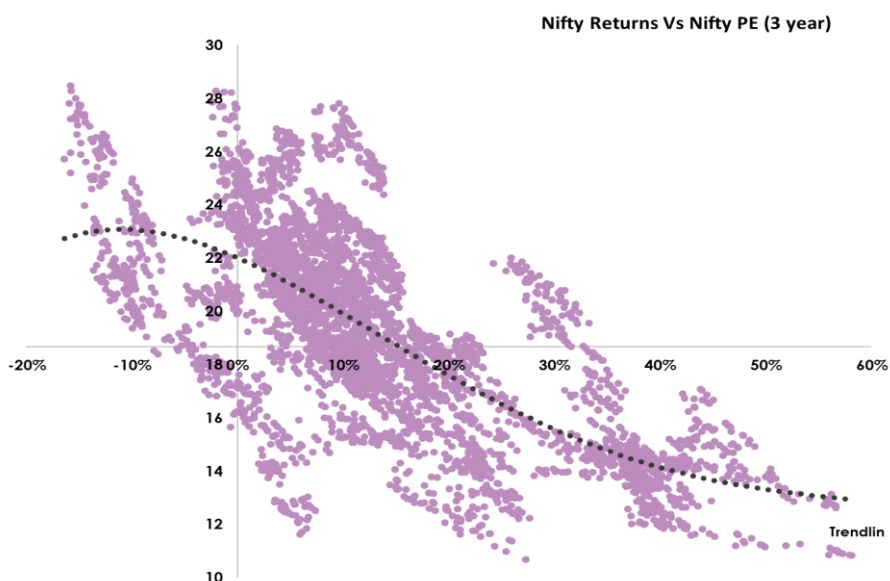


Nifty Returns Vs Nifty P/E

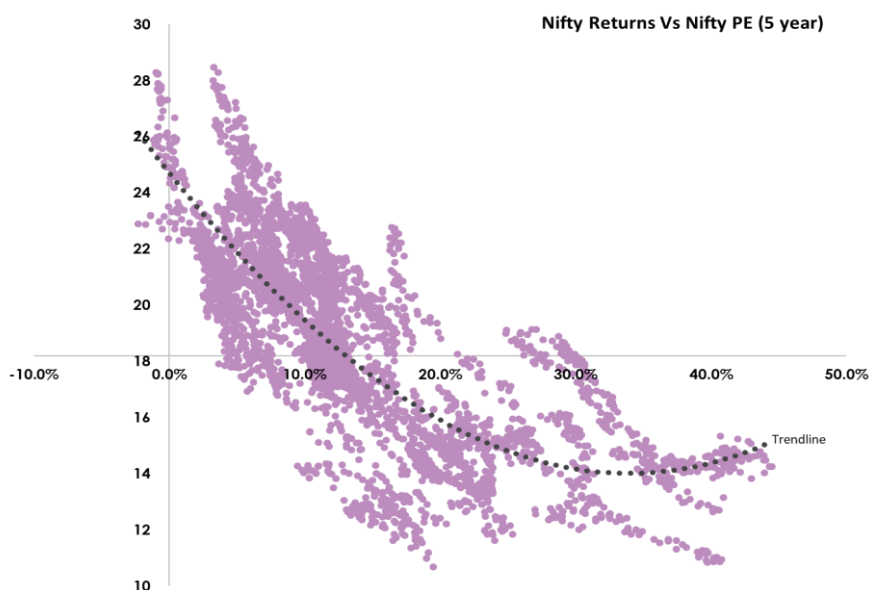


The current P/E is plotted against the future returns. e.g. If we would have invested on 1st Jan 2001 P/E, what could be the return experience 1 year later i.e. on 1st Jan 2002.

The first chart plots the Nifty returns and the Nifty P/E for the period of 1 year. We can observe the trend line from top left to bottom right of the graph, indicating a negative co-relation. i.e. at higher P/E we can get lower returns. The trend line represents the extent of correlation or the range of returns.



The second chart represents the nifty index returns and the nifty P/E for the period of 3 years. It can be seen that the returns are spread across. The negative correlation has reduced. Returns for the sum invested 3 years ago at PE of 18 can be between the range of 3% to 60%.



The third chart plots the 5 year nifty returns and nifty P/E. The returns have moved into the positive region, confirming the negative correlation between the two. For example, if one were to invest at PE of 24 and above it could take 5 years to get small but positive returns. We can see that as the P/E increases the positive returns also decreases.



Nifty Returns Vs Nifty P/E Analysis

PE	Average Returns			% of Time Spend in PE Band			Graph
	1 year	3 year	5 year	% of Time Spend	Cumulative Time Spent	%	
10 - 11	90%	50%	36%	0.2%	0%	8%	
11 - 12	65%	37%	28%	0.9%	1%		
12 - 13	59%	28%	23%	3.0%	4%		
13 - 14	56%	33%	23%	3.8%	8%	25%	
14 - 15	46%	31%	28%	7.1%	15%		
15 - 16	21%	21%	23%	5.5%	21%		
16 - 17	23%	19%	18%	4.1%	25%	36%	
17 - 18	21%	14%	13%	8.7%	33%		
18 - 19	13%	12%	13%	10.1%	43%		
19 - 20	9%	10%	10%	6.6%	50%	20%	
20 - 21	8%	7%	9%	10.8%	61%		
21 - 22	5%	7%	8%	8.8%	70%		
22 - 23	1%	5%	7%	7.1%	77%	10%	
23 - 24	0%	4%	6%	6.2%	83%		
24 - 25	-4%	1%	4%	2.6%	85%		
25 - 26	-3%	3%	4%	4.3%	90%		
26 - 27	3%	3%	3%	4.3%	94%		
27 - 28	-2%	-2%	2%	3.2%	97%		
28 - 29	-10%	-6%	1%	2.7%	100%		

Source: NSE, internal research, Nifty 50 returns as on 30th April 2021. Returns are rolling CAGR for >1 year.

The above table explores the relation between P/E and forward returns in more detail. There is a clear indication of a negative correlation between Nifty P/E and Nifty returns. While, investing in a P/E of more than 24 could lead to higher volatility as well as some negative future returns.

As the tenure increases, the range of returns get tighter with the P/E band. The percentage of data points present in their respective P/E band is also given for reference. The percentage of time spent represents the future returns earned in that particular P/E band, the same is represented by the graph as well. We can conclude from the analysis that investing at a high P/E may reduce a positive return experience and that the Nifty returns & Nifty P/E share a negative correlation.



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