

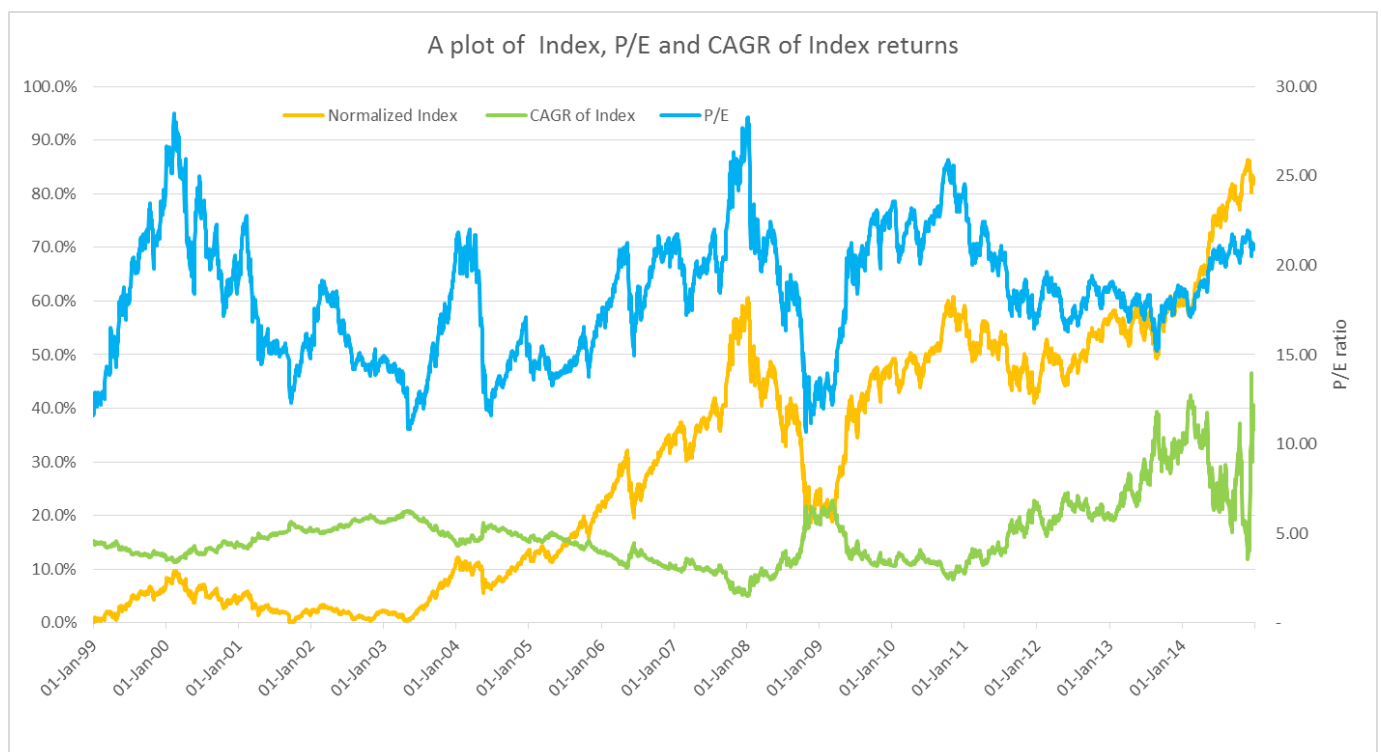
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Investment strategy for long term investors in a market where P/E is high

Stock markets are at an all-time high and the P/E ratio is very close to 24 (much higher than the usual average of 18). The question that is on the minds of many investors is “what should long term investors do in this market?”

We thought we should let the data speak for itself. We believe this white paper will help us, our clients, and readers formulate an investment strategy that is backed by data and analysis.

We used data for last 16 years for this analysis (4,000 days of market data). We wanted to look at the relation between the movement of Index, P/E ratio, and the returns generated by an investor who is investing in the Index on a regular basis and holding it to date.



Some notes:

- Index has moved from 890 in Jan 1999 to 8282 by Dec 31st 2014. For ease of visualization it has been plotted on a % scale. This has been plotted on the primary axis.
- Index return has been computed as compounded annual rate. That means when we say the rate of return for 1999 is 13.6% that means one has received a 13.6% return every year (compounded yearly). This has been plotted on the primary axis.
- P/E has been plotted on the secondary axis. P/E has fluctuated between 10 and 30 in the last 16 years.

Observations from the chart:

- Index direction has been distinctly north bound but for few blips along the way (this is consistent with the trends seen in other markets as Index is a decent proxy for wealth in the country.)
- P/E for a large part has been in the 15 to 25 range with rare periods where it was out of this range.
- Index return has predominantly been between 10% and 20%, with an average around 16.5%. Index return has been a bit higher after 2013, this can be explained by the limited passage of time and can be reasonably expected to move towards the long term average.
- Index return has been below 10% only for a very few days in the last 16 years.
- Index returns have been low when the P/E has been high and vice versa.



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Historically average P/E for Indian market has been 18 and ranged between 10 and 30. For this analysis we have organized P/E into 5 groups, 10-14, 14-18, 18-22, 22-26, and 26-30.

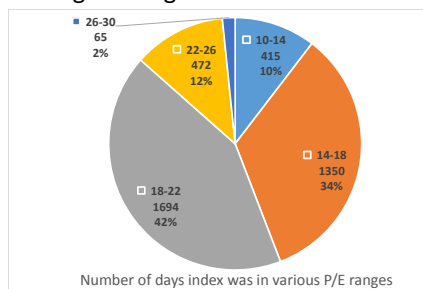
Yearly returns in P/E ranges						
	P/E Range					
Year	10-14	14-18	18-22	22-26	26-30	Total
1999	14.9%	14.3%	13.1%	12.6%		13.6%
2000		15.2%	14.1%	12.8%	11.7%	13.4%
2001	18.4%	16.7%	14.6%	14.1%		16.4%
2002	19.4%	18.6%	17.2%			18.3%
2003	19.9%	18.0%	15.7%			18.6%
2004	17.7%	16.3%	15.4%	15.2%		16.5%
2005	16.4%	15.0%				15.2%
2006		13.2%	11.4%			12.0%
2007		11.8%	10.1%	6.7%	5.5%	9.2%
2008	19.8%	13.4%	10.0%	7.7%	5.2%	12.0%
2009	21.0%	17.9%	13.0%	11.2%		15.0%
2010			12.5%	10.5%		11.0%
2011		20.2%	14.5%	10.9%		15.3%
2012		22.5%	19.8%			21.1%
2013		30.6%	25.6%			28.4%
2014		42.4%	30.6%			31.9%
Total	18.6%	19.0%	16.5%	10.6%	9.2%	16.8%

Average return for the investor investing from 1999 has been 16.8%.

Investments made when the P/E is less than 18 gave returns close to 19%.

Investments made when the P/E was over 22 gave returns that were around 10%.

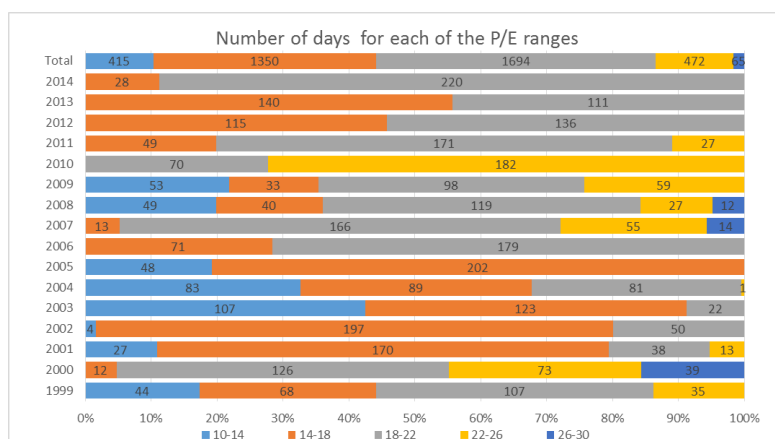
Holding for longer durations tends to improve the annualized returns.



Over the last 16 years:

- P/E was in the range of 14 - 22 for 76% of the time.
- It was over 26 only 2% of the time and less than 14 for 10% of the time.

Number of days when the P/E was in the range						
	P/E Range					
Year	10-14	14-18	18-22	22-26	26-30	Total
1999	44	68	107	35		254
2000		12	126	73	39	250
2001	27	170	38	13		248
2002	4	197	50			251
2003	107	123	22			252
2004	83	89	81	1		254
2005	48	202				250
2006		71	179			250
2007		13	166	55	14	248
2008	49	40	119	27	12	247
2009	53	33	98	59		243
2010			70	182		252
2011		49	171	27		247
2012		115	136			251
2013		140	111			251
2014		28	220			248
Total	415	1350	1694	472	65	3996



- In 2010 P/E was in the 22-26 range for 70% of the year, and the return was 11%.
- High P/E tends to correct (revert to mean) over a period of time either by a fall on the market (years prior to 2009) or by a steady increase in earnings (post 2009).
- P/E's have fluctuated through years and even within a year.

From this one can conclude

- It is best to invest when the market P/E is low.
- It is possible that P/E can stay high for sustained periods of time (like in 2010)
- It is very difficult to predict how and when the P/E will correct.
- It may not be prudent to make investments when the P/E is over 26.
- If one holds for a long time the returns from investments made even during high P/E will be reasonable.
- If one is investing steadily over a period of time then one is able to invest at various levels of P/E and generate returns that are closer to the average return in the market.

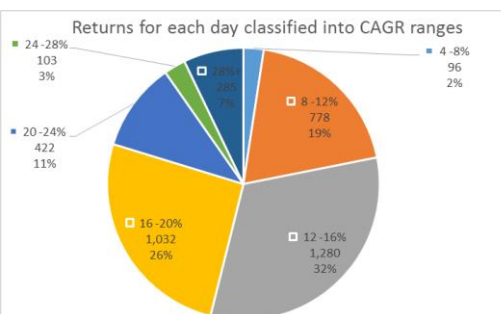


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Historically, average return from index investment has been 16.8% and ranged between 4% and 32%. For this analysis we have organized returns into 7 groups, 4-8%, 8-12%, 12-16%, 16-20%, 20-24%, 24-28%, and 28%+.

Returns classified into various CAGR ranges							
	CAGR Range						
Year	4-8%	8-12%	12-16%	16-20%	20-24%	24-28%	28%+
1999			13.6%				
2000		11.7%	13.7%				
2001			15.0%	17.2%			
2002				18.3%	20.1%		
2003			15.5%	18.4%	20.6%		
2004			15.4%	17.2%			
2005			14.9%	16.4%			
2006		11.1%	12.9%				
2007	6.3%	10.2%	12.1%				
2008	6.7%	9.9%	13.1%	18.7%	20.9%		
2009		11.3%	13.1%	17.9%	21.2%		
2010		10.6%	12.7%				
2011		11.1%	13.4%	18.0%	21.5%		
2012				18.8%	21.7%	24.4%	
2013				19.8%	22.3%	26.0%	32.7%
2014			14.1%	18.3%	22.2%	26.1%	37.2%
Total	6.4%	10.6%	13.9%	17.9%	21.6%	25.9%	35.1%
							16.8%

The returns have fluctuated over the years as well as within the years. Average of the returns was 16.8%.

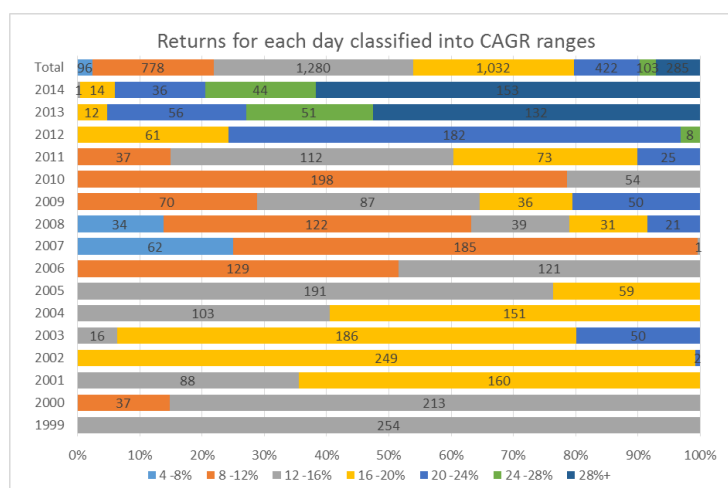


Returns were less than 8% only for 96 days in the last 16 years.

In the last 16 years one would have realized a return between

12-16% for 1,280 days of the 3,996 days (32% of the time)

Number of days in which returns were generated							
	CAGR Range						
Year	4-8%	8-12%	12-16%	16-20%	20-24%	24-28%	28%+
1999			254				
2000		37	213				
2001			88	160			
2002				249	2		
2003			16	186	50		
2004			103	151			
2005			191	59			
2006		129	121				
2007	62	185	1				
2008	34	122	39	31	21		
2009		70	87	36	50		
2010		198	54				
2011		37	112	73	25		
2012				61	182	8	
2013				12	56	51	132
2014			1	14	36	44	153
Total	96	778	1,280	1,032	422	103	285
							3,996



- Investments made over 5 years will tend to cluster in 12-20% range.
- If one is investing regularly there is 88% chance that the returns are between 8% and 24%
- Long term (over 4 to 5 year horizon) returns of over 24% also seem to be less probable, one can expect a reversion to mean. As this high returns is seen only for recent data (2013 and 2014), a bit of this can also be attributed to how the formula for compounding works.

From this one can conclude

- One can reasonably expect returns of over 8% over the long term for equities.
- One should expect variation in returns over a period of time.
- If one has a disciplined approach to investing and invests regularly over a long period of time then one can expect to get returns in various buckets and the average can be closer to the long term average.



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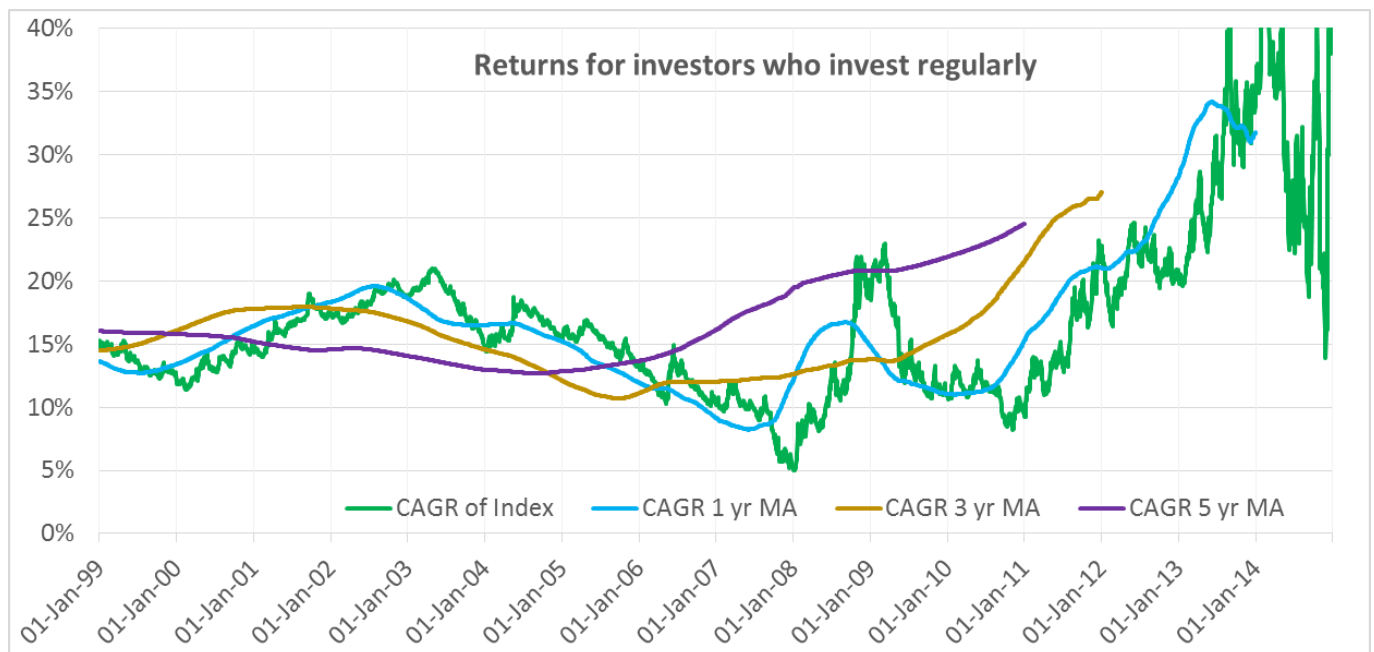
A review of returns using both P/E and CAGR bucketing:

Returns grouped in P/E and CAGR ranges							
P/E Range	CAGR Range						Total
	4-8%	8-12%	12-16%	16-20%	20-24%	24-28%	28%+
10-14			15.0%	18.2%	20.9%		18.6%
14-18		11.8%	14.5%	17.8%	22.2%	25.6%	19.0%
18-22		10.5%	13.6%	17.9%	21.5%	26.3%	16.5%
22-26	6.8%	10.6%	12.9%				10.6%
26-30	5.4%	11.7%	12.0%				9.2%
Total	6.4%	10.6%	13.9%	17.9%	21.6%	25.9%	16.8%

Number of days in which returns were generated grouped by P/E and CAGR							
P/E Range	CAGR Range						Total
	4-8%	8-12%	12-16%	16-20%	20-24%	24-28%	28%+
10-14			51	244	120		415
14-18		13	438	588	136	48	1,350
18-22		448	667	200	166	55	1,694
22-26	70	281	121				472
26-30	26	36	3				65
Total	96	778	1,280	1,032	422	103	3,996

- Investments made in the market when P/E is in the range of 10-18 can expect returns around 18%
- Investments made in the market when P/E is in the range of 18-22 can expect returns around 13.5%
- Investments made in the market when P/E is in the range of 22-26 can expect returns around 10.5%
- Investments made in the market when the P/E is in the range of 26+ can expect returns around 8%

Returns to investors who invest regularly



- An investor who has invested regularly over the last 16 years would have realized a return of 16.8% to-date.
- An investor who has invested regularly over a five year period will realize returns depicted by the purple line. The return would be dependent on the 5 year period that person has invested. The return would have been over 12.7% for any investment period.
- An investor who has invested regularly over a three year period will realize returns depicted by the brown line. The return would be dependent on the 3 year period that person has invested. The return would have been over 10.5% for any investment period.
- An investor who has invested regularly over a one year period will realize returns depicted by the blue line. The return would be dependent on the year that person has invested. The return would have been over 10% for all the years except 2007.
- An investor who is investing regularly over a long period of time does not have to be concerned about the fluctuations in the market



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In the final analysis the following can be a reasonable strategy for investors:

- Investor's expectations of returns from the market should be aligned with the historical averages that have been realized at the similar P/E levels in the past.
- People who have investment opportunities that can reasonably generate over 10.5% returns on a post-tax basis should be cautious when investing in markets where the P/E is over 22.
- People who have investment opportunities that can reasonably generate over 8% in returns on a post-tax basis should be cautious when investing in markets where the P/E is over 26.
- Long term investors who are investing in equities should
 - Ensure that investments being made when P/E is over 22 have a minimum of a 3 year horizon and preferably a 5 year horizon to provide a margin of safety.
 - If the market P/E is over 26:
 - Index investing is best avoided at this level, investing in direct equity should be done only if there is enough margin of safety
 - One should consider selling securities that have poor fundamentals
 - One should be very cautious before completely exiting all equity positions especially ones that are reasonably valued. If the correction of P/E is by increase of earnings (as seen post 2009) then one may not be able to find a reasonable entry point.
 - People who believe that they can time the market by exiting at the top and re-enter at the bottom may want to be cautious as there is no evidence that this can be done and the opportunity cost may be too high if the market corrects by an increase in earnings.
- People holding a significant portfolio (with about 20% of their total assets invested in equities) and have seen a significant run up should be open to holding for long term and accepting a bit of rationalization of the prices. Trying to hold-on to the profits that resulted due to a temporary market mispricing by selling and purchasing may prove to be counterproductive.
- Long term investors who are investing periodically and have plans to continue to invest over a 3 year horizon can continue with their investment plans. The overall impact of the investments during the high P/E period may not significantly impact the long run returns.

Disclaimer: The information provided here is based on our opinions plus our statistical and financial data and independent research. The article does not constitute individual investment advice and is not intended to be a solicitation for investment advisory services. Authors do not guarantee any results that may be following the strategy discussed above. Readers should note that investing involves risk and they should not make any investment decision without first consulting his or her own personal financial advisor and conducting his or her own research and due diligence.

