

Ordinary Investor's Education Series No. 1

HOW THE P/E RATIO CAN REALLY HELP YOU

L. C. Gupta and Naveen Jain

Society for Capital Market Research & Development

jointly with

Vivek Financial Focus Limited

C O N T E N T S

	Page
1. <u>Indispensable tool for equity investing</u>	2
2. <u>Handle with care</u>	3
3. <u>Measuring the market's mood</u>	5
4. <u>Basic share valuation concept</u>	8
5. <u>Don't forget the qualitative factors</u>	10
6. <u>Invest within your "circle of competence"</u>	12
7. <u>A useful rule of thumb</u>	14
8. <u>Earnings yield concept</u>	16
9. <u>Actual returns earned by investors on Indian equities</u>	18
10. <u>Be a focused investor</u>	20

INTRODUCTORY

On what basis can you decide whether the Sensex level of 7500+ is too high, high or fairly reasonable? There is only one basis, viz., its P/E ratio.¹ The same is true about the price of an individual company's share. The investor should learn how to weigh the prevailing share "price" against the "true value" of the share and should buy only if the "value" exceeds the "price". The P/E ratio can help in such weighing.

Among the financial ratios from the viewpoint of stock selection, the P/E ratio occupies the most important place. Interestingly, one of the books written by Peter Lynch to share his experiences about how he achieved great investment success is titled as *Learn to Earn: A Beginner's Guide to Basics of Investing and Business*. There are, of course, many things to learn step by step. Among these is a basic understanding about P/E ratios.

I.

Indispensable tool for equity investing

1. In the final analysis, when buying a share for *investment* of your savings (we are not considering *speculation*²), you are really buying a *stream of future earnings* over many years. Hence, you should judge the price by relating it to the estimated future earnings. This will help to ensure that you are not paying too much for too little. The P/E ratio helps to achieve the same.
2. Investment analysis of this kind is commonly called *fundamental analysis*.³ The P/E ratio is the ratio of share price to earning-per-share (EPS).⁴ By understanding it, you will be better able to choose *the right stocks at the right time and the right price*.

¹ The P/E ratio has been defined in para 2.

² ‘Speculation’, as normally understood, attempts to make quick profit by anticipating change in market price over a very short-term. It is a trading activity. On the other hand, investment activity is focused on assessing the prospects of enterprise performance over a long period and consequential appreciation in share price.

³ This is distinguished from ‘technical analysis’ which *does not look at earnings at all* but relies wholly on the past patterns of share price behaviour, hoping that particular patterns will be repeated.

⁴ The EPS is average earning per share during the year. It is calculated by dividing the year’s total net profit earned by the company (after tax) by its total number of equity shares.

II.

Handle with care

3. The computation of the P/E ratio is simple arithmetic but it is not always done by using the correct and relevant figure of earnings. You should know the correct way of computing the ratio and should not uncritically accept the reported or published figures. For example:
 - Earnings may include “extra-ordinary” items, i.e. items which are unlikely to be repeated in future years (such as profit on sale of some old machinery, or of some other assets, or it could be an extra-ordinary loss caused by accidental break-down of plant, workers’ strike, etc).
 - Accounting policies adopted by different companies may be different, making a comparison of their P/E ratios invalid unless you make the necessary adjustments.
 - There may be wide year-to-year fluctuations in EPS of the same company. Such fluctuations may be cyclical or irregular. Hence, looking only at one particular year’s earnings may be misleading. What you really need to find out is the estimated level of *future* earnings. You are not paying a price for *past* earnings. Adjustment, averaging or normalization of earnings may be required.
 - The EPS can be sometimes negative when the company has suffered a loss. If so, no meaningful P/E ratio can be computed for the particular year. Averaging or normalisation can be used in such cases.
4. The P/E ratio by itself does not mean much unless you have sufficient understanding of the nature of a company’s business, quality of management, future growth prospects, etc. so as to be in a position to know the likely range within which the earnings may vary.

5. From long-term investment viewpoint, it is useful to compute the *P/E ratio based on the estimated growth of EPS over the next 3-5 years*, as explained a little later by an example.

Cash earnings per share (CEPS)

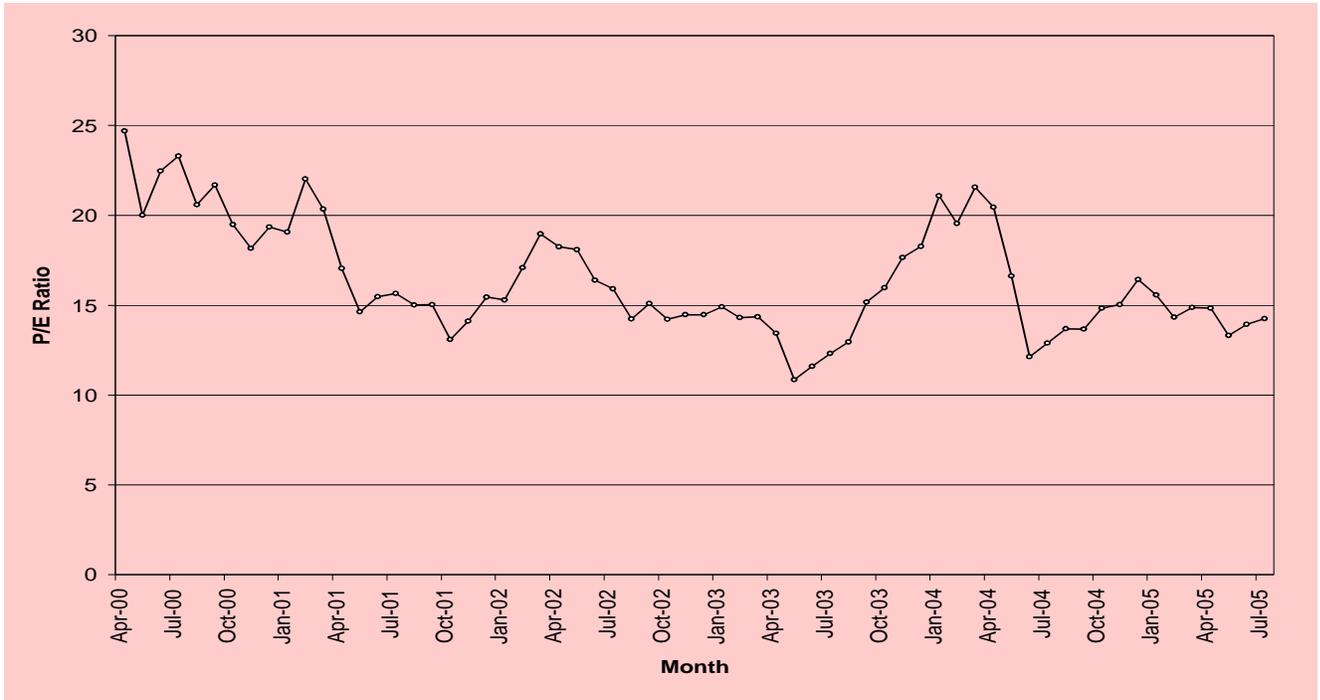
6. Some analysts recommend the use of cash earning per share (CEPS), i.e. earnings before charging depreciation, whereas the EPS is *after* charging depreciation. Those who favour the use of CEPS argue that depreciation does not involve any cash outgo and that this advantage is not captured by the EPS. Don't be carried away by this argument. It ignores the fact that the assets will have to be replaced sooner or later. If the replacement costs exceed the original costs, as usually happens due to inflation, the amount required will be much more than the accumulated depreciation provision. Hence, the use of *CEPS provides a rosier picture of earnings than what it really is*.

III.

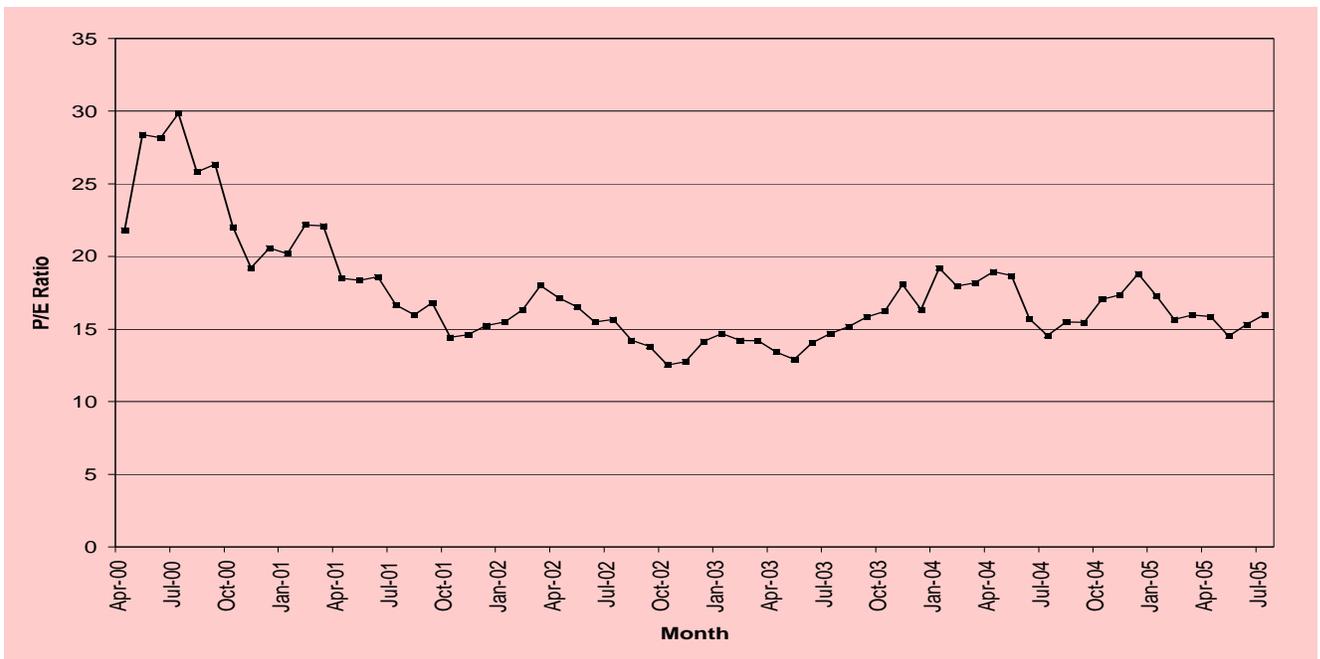
Measuring the market's mood

7. As distinct from an individual company's P/E ratio, the investor should also understand the *market's average P/E* ratio. According to data provided by the National Stock Exchange in its *Fact Book 2005* for nearly ten years since 1995-96, average P/E ratio of the 50 companies covered by Nifty index had a range of 14-16 in normal times. During years when the market was over-heated, like most part of 2000 (which saw an extra-ordinary boom in "new economy stocks", specially IT stocks), Nifty's P/E ratio rose to around 20-24. This declined very soon. Our detailed historical analysis suggests that when the average P/E ratio begins to exceed 16, it is bordering the danger zone. Graphs 1 and 2 show the range of average P/E ratio on monthly basis for Nifty index companies and BSE Sensex companies respectively for the period from April 2000 to June 2005. These graphs can help investors to judge the safe level of the market's average P/E ratio.
8. Economic logic as well as history tells us that the market's madness often drives the average P/E ratio to absurd levels. Investors need to be aware about such *absurd levels of the P/E ratio* so that they become cautious. The market is sometimes euphoric, sometimes melancholy. Swings in the market's mood are indicated by the market's average P/E ratio rather than by the absolute levels of the index.
9. In the early 1990s in India, not many investors and market intermediaries understood and used the P/E ratio. It was even argued by some prominent stockbrokers that fundamental analysis did not apply in Indian conditions. When asked what then was the basis for advising their clients, the answer was "tips, news and rumours"! Market movements were, therefore, often chaotic and caused frequent crises. For example, the average P/E ratio of BSE Sensex, which had touched somewhat high level of 18 around July 1991, doubled by April 1992. Thereafter, it halved over the next 12 months and then doubled again to touch 43 in April 1994. Such non-sensical movements did not seem to worry the stock exchanges! By early December 1996, the P/E ratio had fallen to 10.5, just one-fourth of the level touched in 1994!

Graph 1
P/E Ratio – S&P CNX Nifty



Graph 2
P/E Ratio – Sensex



10. Statistical data shows that the magnitude of stock price fluctuations in India is relatively high, much higher than in the developed markets, like the U.S. and U.K. The greater riskiness of the Indian stock market arises from two major factors: (a) weakness of the corporate governance system and (b) weakness of checks on market manipulation and excessive speculative tendencies.
11. This is why share investment is not as popular among domestic investors in India as in the developed markets and our investors need to be far more cautious.
12. Share investment is perceived as too risky by the Indian public for another reason too, viz. The market's high volatility, caused by excessive speculation as well as manipulation. *Indian market authorities unfortunately continue to brush aside volatility as no problem whereas ordinary investors regard it among their biggest worries*, as shown by our investor surveys.
13. This also explains why very little of Indian provident and pension fund money is invested in equities whereas about one-half of the American and British pension fund accumulation is invested in equities. *Bringing down the stock market's volatility should be an important part of stock market reform in India.*
14. Individual equity investors can, to some extent, minimize risk and enhance the return on equity investment by adopting sound methods of selecting stocks and appropriate timing of the investment. A deeper understanding of the P/E ratios can be definitely helpful here.

IV.

Basic share valuation concept

15. The P/E ratio is a kind of short-cut for selecting shares. The investor should also keep the basic valuation method in mind. It would improve his/her grasp of the fundamental factors involved. According to the basic method, the value of shares (or any long-lasting asset) is the *present value of the expected future cash flows* arising from shares or other asset.⁵ The cash flows in the case of shares comprise dividends and the terminal value realisable on sale at the end of a reasonably long holding period. ('Long period' because we are considering return from 'investing', rather than from trading or speculation).
16. The basic valuation formula involves several *assumptions*, viz.:
- (a) year-to-year future earnings;
 - (b) pay-out ratio; i.e. the proportion of earnings distributed as dividends, the rest being re-invested in expanding the business;
 - (c) rate of return likely to be earned on re-investment of retained earnings (and the resulting rise in earnings and dividends from year to year);
 - (d) the holding period of the investment;
 - (e) the terminal value of investment;
 - (f) the appropriate rate of discount for computing the present value of the cash flows.⁶

⁵ You would have heard about "time value" of money. An amount of Rs. 100 receivable today has a higher value than Rs. 100 receivable after 1 year, which, in turn, will have higher value than Rs. 100 receivable after 2 years and so on. The present value of a future sum can be computed by "discounting" it.

⁶ In the case of large physical investment projects, such as manufacturing plants, power plants, other infrastructure projects, there is a large cash outgo in the initial period, followed by cash inflows after commencement of commercial operations. Such projects still use the discounted cash flow method for evaluating the project profitability over its lifetime.

17. The assumptions made above imply that the per share earnings and dividends would grow at a compound rate because of re-investment of a part of the earnings. Hence, the share price would also grow. Thus, the shareholder's reward would comprise (a) capital gain and (b) dividend. The higher the expected growth rate of EPS, the higher will be the P/E ratio. The capital gain has become a far more dominant part of the return on equity shares now-a-days than in olden times.⁷ The *dividend yield* (i.e. dividend per share as percentage of prevailing share price) is often as low 1.5-2.5% in the case of leading shares. The investor should still **choose mainly dividend-paying companies for investment**. This ensures that the company is profitable and is under psychological pressure to maintain and improve profitability. It is easier for companies to cook profits when no dividends are being paid.

⁷ See L. C. Gupta and Utpal K. Choudhury, *Returns on Indian Equity Shares* (Society for Capital Market Research & Development, Delhi, 2000), specially pp. 29-30 and 37.

V.

Don't forget the qualitative factors

18. Apart from the measurable *quantitative* factors, mentioned above, there are also non-measurable *qualitative* factors, such as management's integrity, general capability, entrepreneurial flair and core values, the nature of the company's business and future growth prospects. These are much more important over the long term than purely quantitative factors.
19. The stock prices often diverge significantly from their true value based on the basic valuation method, but it is generally recognised that the *price of a stock is ultimately, i.e. in the long term, related to the company's earning power*. A good foundation for long-term investment success would be to *learn how to identify those companies whose earnings are likely to grow the fastest over the next many years, and whose managements are honest and caring of the shareholders' interest*.⁸
20. Peter Lynch, a world famous advocate of long-term equity investment strategies, based on close study of companies, is extremely sarcastic about those who attach importance to watching the ticker-tape rather than studying the companies. In his words:

*“They think as if the stock prices have a life of their own. They track the ups and downs, the way a bird watcher might track a fluttering duck. They study the trading patterns, making charts of every zig and zag. They try to fathom what the “market” is doing, when **they ought to be following the earnings of the companies whose stocks they own.**”⁹ (Emphasis added)*
21. Benjamin Graham, who is regarded as the father of security analysis by one and all, had made the famous remark long ago that the market

⁸ See Jim Collins and Jerry I. Porras, *Built to Last: Successful Habits of Visionary Companies* (Harper Collins Publishers, New York, 1994)

⁹ Peter Lynch *Learn to Earn to learn*, New York, 1995, p.158

is like a “voting machine” in the short run but a “weighing machine” in the long run. The serious long-term investors need to be patient investors.

22. The real question is: Is the share worth the price? In other words; “Is the price more than, or less than, the “value”, usually known as “intrinsic” or “true” value of the share. Such value depends on the returns expected from the share over the future years. It has been truly said that “By itself the price of a stock doesn’t tell you a thing about whether you are getting a good deal.”¹⁰
23. The investor is paying a price to **buy a future stream of** income. The share value depends on the growth rate of EPS and the duration of the growth.

¹⁰ Peter Lynch, *Earn to Learn*, New York, 1995 p-158.

VI.

Invest within your “circle of competence”

24. This is a very salutary principle because it reduces the chances of mistakes in the selection of stocks for investment. Many highly successful investors attribute their success to this principle. Among these is Philip Fisher who has emphatically stated that he achieved success by confining his investments to shares of manufacturing companies because he understood the characteristics of manufacturing business much better than other businesses, like insurance, banking, etc.¹¹

Don't be a hit-and-run investor

25. Warren Buffett has observed that the investor's ability to identify good investment opportunities is in direct proportion to the degree to which he/she understands a company's business. Those who invest without such understanding are described by him as “hit-and-run” investors. He has strongly advocated the principle that one should invest within one's “circle of competence”.

Ask yourself what your circle of competence is

26. The “circle of competence” varies with the background of the individual investors. For example, medical doctors would know more about pharma companies; similarly, people, who have worked in an automobile company or a cement company or paints company, would know more about the competing companies in those businesses.
27. Warren Buffett explicitly limits the selection of companies to those which are within his “circle of competence”. He focuses on a few selected companies and takes big bets on them. By knowing the companies well and always buying at a price which provides a *margin*

¹¹ See Philip A. Fisher, *Common Stocks and Uncommon Profits* (Wiley, 2003).

of safety, he tries to almost eliminate investment risk. By using this approach consistently for a long time, he has achieved the distinction of being the most successful investor and the second richest man in the world. He admits that he had to miss some great investment opportunities in the IT sector because he did not understand this type of business. However, he has no regrets because his approach helped him to avoid big mistakes which are common when one invests without fully understanding the investment.

VII.

A useful rule of thumb

28. Some writers have devised a very practical and simple rule of thumb regarding the upper limit on a particular company's P/E ratio. The investor is required to make an "educated guess" about the expected **growth rate of the company's EPS**. Once the investor has estimated this, the rule says that, to be on the safe side, the maximum acceptable *P/E ratio should be substantially less than the annual percentage growth rate of the company's EPS*. For example, if the company's EPS is expected to grow by well over 20% in the future years, the acceptable P/E ratio should be substantially below 20.
29. The point behind the formula advocated above is that when the annual growth rate of EPS remains substantially higher than the P/E ratio at which the share purchase was originally made, the ratio of P (i.e. the price paid originally) to the EPS of the successive years would go on declining. (see Exhibit 1, last line)
30. Exhibit 1 assumes that the EPS is Rs. 70 and the market price is Rs. 2,200 per share in the initial Year-0, in which the shares were purchased. The P/E ratio was therefore 31.4 (i.e. $2200 \div 70$). Most investors would be daunted by such high P/E ratio when the average P/E for leading companies is only around 14-15.
31. Exhibit 1 shows that, from the viewpoint of the investor who purchases the shares of this company at the ruling price of Rs. 2200 in Year-0 for long-term holding, the relevant P/E is the one computed on *forward basis*, i.e. based on the EPS of the future years, as shown in the last line of Exhibit 1. Many institutional investors adopt this method by using estimated EPS for the next 3-5 years. This tells them whether the P/E ratio is advantageous from long-term investment angle.
32. For the purchaser in Year-0, the P/E ratio on the basis of 5th year EPS is as low as 5.8. No good company's shares with an excellent record of EPS growth can be available so cheap.

Exhibit 1

Example of P/E Computation on Forward Basis

	Yr.0	Yr.1	Yr.2	Yr.3	Yr.4	Yr.5
(a) Estimated EPS (annually growing at 40%)	70	98	137	192	269	377
(b) Purchase price	2200	-	-	-	-	-
(c) P/E (i.e., original purchase price ÷ EPS of each year)	31.4	22.4	16.1	11.5	8.2	5.8

33. By the 5th year, the price of the company's shares would have gone up substantially due to rise in EPS. Those who purchase the shares in the 5th year would be paying a price based on the EPS achieved by the company and the P/E ratio prevailing then. An investor, who made the purchase in Year-0 and could correctly estimate the future EPS growth, would have multiplied the value of his original investment 4-5 times.

VIII.

Earnings yield concept

34. The term ‘yield’ usually refers to the percentage return earned on any investment, valued at its current market price, such as yield on government bonds, or corporate bonds. Dividend yield on shares refers to dividend per share as percentage of the current market price of the share.
35. In the P/E ratio, the share price (P) is expressed as a multiple of the earning-per-share (EPS). The inverse of P/E ratio is E/P, in which the *EPS is expressed as a percentage* of share price and is known as “earnings yield”.¹² This is the percentage return which the company is earning against each share, valued at the current market price. The dividends are paid out of such earnings. Hence, the importance of the company’s earning power to the shareholders.
36. The “earnings yields”, for successive years’ are shown in Exhibit 2. On the assumption made by us about the growth of EPS (see Exhibit 1), it may be observed from Exhibit 2 that the earnings yield, which was just 3.2% in Year-0, becomes as high as 12.2% in the 4th year and 17.1% in the 5th year, based on the purchase price paid in Year-0. This increase in the earnings yield is wholly attributable to increase in EPS.
37. In our example, as the P/E ratio decreases in the successive years, the earnings yield correspondingly rises (see Charts 1 and 2).

¹² Earnings yield is equal to:

$$\frac{\text{EPS}}{\text{Market Price}} \times 100$$

Exhibit 2

Example of Earnings Yields Corresponding to P/E Ratios

	<i>Yr.0</i>	<i>Yr.1</i>	<i>Yr.2</i>	<i>Yr.3</i>	<i>Yr.4</i>	<i>Yr.5</i>
(a) P/E ratio	31.4	22.4	16.1	11.5	8.2	5.8
(b) Earnings yield (%)	3.2%	4.5%	6.2%	8.7%	12.2%	17.1%

Explanation: Earnings yield as a percentage, has been computed from the data given in Exhibit 1 in the following manner: $(\text{EPS} \div \text{Price}) \times 100$. The figures are as follows: for Yr.-0 = $(70 \div 2200) \times 100 = 3.2\%$; for Yr.-2 = $(98 \div 2200) \times 100 = 4.5\%$ and so on. The EPS is on forward basis as it relates to the future years whereas the purchase price relates to the initial year.

Chart 1
P/E Ratio Based on Exhibit 1

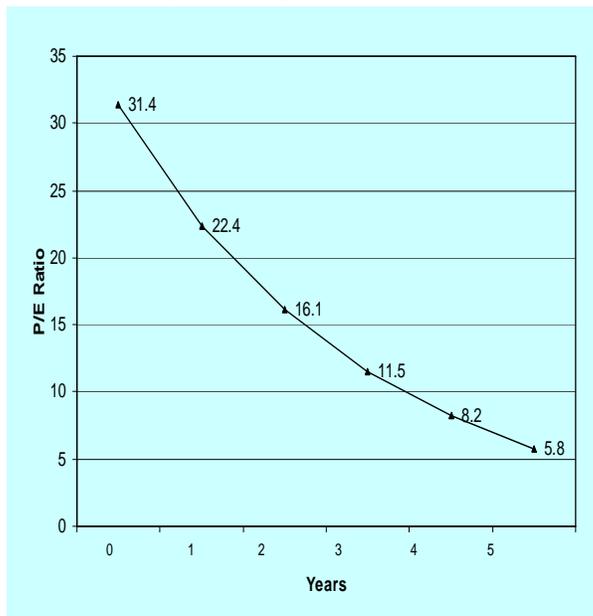
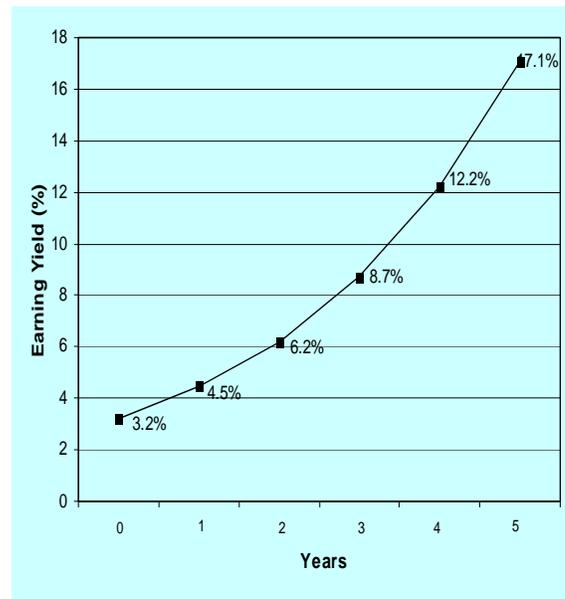


Chart 2
Earning Yield based on Exhibit 2



38. The level of percentage yield on shares (a risky form of investment) is expected to be higher than the yields on safer types of long-term investments, such as bonds. The difference represents the “risk premium” which equity investors expect for providing “risk capital” to companies.

IX.

Actual returns earned by investors on Indian equities

39. Anybody contemplating to invest his/her hard-earned savings in equity shares would like to know how the equity returns compare with those on safer forms of investments. Do they compensate for the higher risk involved?
40. Systematic research studies in the U.S. have shown equity returns to be higher than fixed-interest investments over long-terms of 10-20 years, although equity returns over shorter periods are highly variable and uncertain. Equity investing is widespread among American investors from the youth stage. Also, the American pension funds invest as much as one-half of the accumulated money in equities. This is unthinkable in the present Indian situation.
41. Two pioneering and well-known studies for India had made a serious attempt to measure long-term returns on equities. The results showed wide variation even over long periods. These studies were: (1) *Rates of Return on Equities: The Indian Experience*,¹³ based on 16-year period 1960-76 and (2) *Returns on Indian Equity Shares*,¹⁴ covering 19-year period 1980-99, both authored by Dr. L.C. Gupta.
42. If we look at the more recent period of preceding 10 years or so, the average rate of return on leading Indian equities can be roughly estimated for 50 stocks covered by the NSE's Nifty Index, as also for 30 stocks covered by BSE's Sensex, as explained below.

Return on Nifty index companies

43. The Nifty index rose from its base of Rs. 1000 in 1995-96 (Nov-Mar.) to 2360 at the time of writing as on 5th August 2005, a total stretch of about 9.5 years. This rise represents a compound annual

¹³ Published in 1981 by the Oxford University Press.

¹⁴ Published in 2000 by the Society for Capital Market Research & Development

growth of approximately 10%. In addition, the investors also received dividends. The average dividend yield was around 2% per annum on such leading stocks. Thus, the total annual equity return on Nifty index shares taken as a whole has been around 12%. Of this, the bulk (over four-fifths) represented capital appreciation.

Return on BSE Sensex companies

44. As regards BSE Sensex, we find that, over the same period of 9.5 years as mentioned above, it has risen from about 3300 to 7754, implying about 10% compound rate of annual growth. This similarity between the Nifty companies and Sensex companies is not a coincidence. It is mainly due to the fact that many stocks are common between these indices. Including both capital appreciation and dividend yield, the average total return in the case of both groups of companies is around 12% per year.

Return net of inflation

45. Allowing for annual inflation of about 4.5-5.0%, the real rate of average return on the leading equity stocks has been about 7.0-7.5% per year.

Wide differences among individual stocks and also among individual experiences

46. Whatever be the average return on index companies taken as a whole, two points should be noted: (a) the returns on *individual stocks* differ very widely, and (b) experiences of *individual investors* also vary a great deal, depending on the investor's own skill, as also on chance factors. Of course, one could choose to invest in an index fund but then such funds charge both an entry fee and an annual management fee. The investor's return is thereby reduced. According to our investor surveys, index funds are not at all popular in India.

X.

Be a focused investors

47. Learn to select a manageable number of companies (say, 5-7) by applying strict criteria. Having too many companies in your portfolio reduces your average return on investment because choosing and supervising too many companies becomes difficult.
48. The companies selected should be those having a growing business and possessing management of proven integrity, sincerity and capability. Over a period, you would acquire a deeper understanding of the companies and their businesses. As and when the share market temporarily dips, you should buy more shares of the good companies already in your portfolio, thereby reducing your average cost of acquisition. No amount of diversification can protect you against the market's volatility, but the strategy suggested above would turn the market's volatility into an opportunity and enhance your rate of return over the long term.